

JOINT CALIFORNIA AIR RESOURCES BOARD and  
CALIFORNIA ENERGY COMMISSION PUBLIC WORKSHOP

BEFORE THE  
  
CALIFORNIA ENERGY RESOURCES CONSERVATION  
  
AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	Docket No.
CALIFORNIA STRATEGY TO REDUCE	)	01-SRPD-1
PETROLEUM DEPENDENCE	)	
_____	)	

CALIFORNIA ENERGY COMMISSION  
  
1516 NINTH STREET  
  
HEARING ROOM A  
  
SACRAMENTO, CALIFORNIA

THURSDAY, MAY 15, 2003

9:32 A.M.

Reported by:  
Peter Petty  
Contract No. 150-01-005

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

CEC and ARB STAFF PRESENT

Susan Brown, CEC

Gerry Bemis, CEC

Dan Fong, CEC

Tom Cackette, CARB

Eileen Wenger Tutt, CARB

Paul Wuebben, South Coast Air Quality Management  
District

Melissa Jones, Advisor to Commissioner Geesman  
California Energy Commission

ALSO PRESENT

Tom Koehler  
Kinergy Resources, LLC

Kathryn Phillips  
Center for Energy Efficiency and Renewable  
Technologies

Andrew A. Frank  
University of California Davis

Jerry Pohorsky  
The Pohorsky Group

Tim Castleman

Stephanie Williams  
California Trucking Association

Eric E. Worrell  
EEW Company

Greg Greenwood  
California State Resources Agency

Mary Jean Burer  
Natural Resources Defense Council

Michael L. Eaves  
California Natural Gas Vehicle Coalition

ALSO PRESENT

Elisa Lynch  
Bluewater Network

Richard McCann  
M3 (Cubed)

Jim Larson  
Pacific Gas and Electric Company

Jennifer N. Pont  
TIAX, LLC

Gregg Moscoe  
WestStart/CalStart

Kevin Finney  
Union of Concerned Scientists

Gretchen Knudsen  
International Truck and Engine Corporation

Steven P. Douglas  
Alliance of Automobile Manufacturers

Gina Grey  
Western States Petroleum Association

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## P R O C E E D I N G S

9:32 a.m.

MS. BROWN: I'm Susan Brown, Project Manager for this proceeding. This is a two-year-long effort by the Energy Commission and the Air Resources Board Staff to address the requirements of Assembly Bill 2076.

About a year ago we issued a number of technical reports. I believe it was in March 2002. We have updated versions of those reports out in the lobby on the table.

But today really what we'd like to do is ask the parties to focus on the summary report that will be discussed in detail in the staff presentation in just a few moments.

So the purpose really of today's workshop is to allow the staff to interact with you and to present our key findings and recommendations. A separate hearing has been scheduled for June the 6th -- that is a Friday; that's three weeks from Friday -- at the ARB in the Sierra Hearing Room to obtain official testimony, oral testimony and written comments.

So I want to make that very clear from the onset, that today is really our chance to

1       brief you on what the staff has done and why; and  
2       why we've chosen the recommendations we have; and  
3       the goals that we're recommending.

4               So, you should have a copy of the  
5       agenda. It's very brief. I have a few other  
6       announcements to make, and then I'm going to ask  
7       Dan Fong to make a staff presentation, which will  
8       last probably about 45 minutes, on the overview of  
9       the report, the recommendations, and the  
10      recommended goals.

11             And I'd ask that if you do want to speak  
12      or ask questions that you wait until the end of  
13      Dan's presentation; that you identify yourself for  
14      the record; and please spell your name for the  
15      benefit of the court reporter; and leave us a  
16      business card.

17             I should also mention that this workshop  
18      is being transcribed, so there will be a  
19      transcript available approximately two weeks after  
20      this workshop. We'll also have opportunity for  
21      public comment on June 6th at the Committee  
22      hearing.

23             I should also explain that at that  
24      hearing Commissioners Jim Boyd and John Geesman  
25      will preside and ARB Chairman Alan Lloyd will also

1 be present. So that is your opportunity to really  
2 provide your testimony and your support or  
3 opposition or comments on the overall proceeding  
4 to both agencies in one forum.

5 So, with that, are there any questions  
6 on the hearing or the logistics or what we're  
7 trying to accomplish today? Yes. Come to a mike,  
8 I'm sorry, and identify yourself for the record  
9 and spell your name.

10 MR. KOEHLER: Tom Koehler, Kinergy  
11 Resources. K-o-e-h-l-e-r. So that the process is  
12 today and then the hearing in June. What happens  
13 between today and then?

14 MS. BROWN: You have the opportunity to  
15 review the report that we're talking about today,  
16 the 20-page summary report. We're also making  
17 available the underlying technical appendices  
18 which the staff has been working on for over two  
19 years.

20 So, really we're looking for your input  
21 on the summary recommendations and the goals at  
22 the June 6th hearing. So our work is essentially  
23 on hold until we hear from you. We set June 6th  
24 as the deadline for comments, written comments, on  
25 the report.

1           So this is your opportunity to ask  
2       questions of the staff on what we've done and how  
3       we've done it. And many of you have been with us  
4       for the last year and a half, two years. For  
5       those of you who are new, we're happy to talk with  
6       you after the workshop. Or if you have specific  
7       questions, raise them today. This is really your  
8       opportunity to ask the staff questions about the  
9       recommendations, the goals and the underlying  
10      technical work. Does that help?

11           MR. KOEHLER: Yeah, so you won't be  
12      making any changes until after June 6th?

13           MS. BROWN: That is correct. Okay?  
14      With that I'm going to ask the panel first to  
15      introduce themselves, starting with Gerry.

16           MR. BEMIS: Sure. My name is Gerry  
17      Bemis on the technical staff; I work for Susan.

18           MR. WUEBBEN: I'm Paul Wuebben; I'm a  
19      clean fuels officer with the South Coast Air  
20      Quality Management District. And I'm also on loan  
21      for this project as a transportation energy  
22      adviser for the Air Resources Board.

23           MR. CACKETTE: I'm Tom Cackette; I'm the  
24      chief deputy to the ARB.

25           MS. TUTT: I'm Eileen Tutt, staff person



1 at the Air Resources Board.

2 MR. FONG: Dan Fong with the California  
3 Energy Commission.

4 MS. BROWN: And if there are no  
5 questions at this point I'm going to turn the  
6 presentation over to Dan Fong.

7 MR. FONG: Thank you.

8 MS. BROWN: While he's getting ready,  
9 there are copies of the PowerPoint presentation in  
10 the back on the table for those of you who'd like  
11 to take a copy back with you.

12 MR. FONG: They told me if I pressed the  
13 right button we could actually see a "Matrix  
14 Reloaded" here, but --

15 (Laughter.)

16 MR. FONG: -- that's probably not going  
17 to happen.

18 So this morning I'll briefly touch upon  
19 these topics in our presentation. We'll review  
20 some of the requirements that directed the staff  
21 through legislation that was enacted in the year  
22 2001, AB-2076.

23 We will briefly review the basecase fuel  
24 demand forecast that was required by the  
25 legislation. We'll touch upon some of the

1       petroleum reduction options that we evaluated in  
2       developing our recommendations.

3               We'll summarize some of the key  
4       technical results; discuss the recommendations  
5       that we're providing to our policymakers. And  
6       then briefly go through some next steps.

7               In AB-2076 the Energy Commission was  
8       directed to produce a forecast for gasoline,  
9       diesel and petroleum consumption in the years  
10      2010, 2020 and at least through 2030.

11              The Energy Commission and the Air  
12      Resources Board would then produce and issue a  
13      joint report to the Governor and Legislature.  
14      This report would contain a recommended strategy  
15      for reducing the state's petroleum dependence.  
16      That strategy would also include statewide goals  
17      for reducing the rate of growth in petroleum  
18      fields consumption.

19              Another major element of this  
20      legislation was directed to the Commission, as  
21      well. We were required to examine the feasibility  
22      of operating a strategic fuel reserve. That  
23      effort, however, is being considered under a  
24      separate proceeding being conducted by the Energy  
25      Commission.

1           On this graphic we show some historical  
2       fuel demand numbers as well as the forecast that  
3       was produced by the Energy Commission Staff. In  
4       roughly the year 2003/2004 you'll see that our  
5       gasoline demand is approximately 15 billion  
6       gallons a year. That's well over one billion  
7       gallons a month. That demand is expected to grow  
8       by at least a third by the year 2020.

9           The two other major fuel components that  
10      we derive from the use of petroleum are jet fuel  
11      and diesel. Our report, however, will not address  
12      jet fuel. And as it turns out the two primary  
13      fuels that we'll be looking at are gasoline and  
14      diesel. Those two fuels comprise roughly 75  
15      percent of our total petroleum fuels demand.

16           Our analysis shows that there is this  
17      serious growing gap between the state's fuel  
18      supply, capacity and its energy, transportation  
19      energy demand.

20           On this particular graphic we show this  
21      growing gap, that over time this gap increases.  
22      And so one of the key questions that we're  
23      attempting to answer is how might the state best  
24      meet that gap. Should it be through some strategy  
25      to reduce the demand through some field

1 displacement options, or should we rely solely on  
2 the import of refined products.

3 The work was split up between the Air  
4 Resources Board and the Energy Commission as  
5 follows: Task 1 corresponds to appendix A, which  
6 is available in the lobby. That work was led by  
7 the Air Resources Board and they evaluated the  
8 environmental benefits of reducing gasoline and  
9 diesel fuel demand.

10 In task 2, which corresponds to appendix  
11 B, the Energy Commission produced its forecast for  
12 California's petroleum fuels demand as required by  
13 the legislation.

14 In task 3, that corresponds to appendix  
15 C, the Energy Commission documents the cost/  
16 benefit analysis that it conducted in evaluating a  
17 variety of petroleum reduction options.

18 And then finally, in task 4, which is  
19 appendix D, the Energy Commission and the Air  
20 Resources Board jointly prepared a summary  
21 document. And then produced recommendations for a  
22 goal and an overall strategy.

23 Some of the petroleum reduction options  
24 we evaluated are summarized on this slide. They  
25 were broken up into four primary groups. The

1 first group includes vehicle and fuel efficiency  
2 options. And we sort of name a variety of those  
3 options. This is not the total number of options,  
4 just some of the selected ones. And for greater  
5 detail you should really consult the technical  
6 appendices.

7 The second group is our fuel  
8 substitution options. These are primarily non  
9 petroleum based fuels. And again we list some of  
10 the options that we evaluated. Again, there are  
11 additional options that go beyond the list that we  
12 show on this slide.

13 The third group are a set of financial  
14 incentive mechanisms which we call pricing  
15 options. These options tend to influence consumer  
16 choice. Again, this is just a short list of those  
17 cases that we evaluated.

18 And then finally in the last group we  
19 lumped or combined a number of different  
20 mechanisms to reduce petroleum fuel demand. They  
21 include some mode choices that I think most of you  
22 are familiar with. Again, greater detail on these  
23 options can be found in our technical appendices.

24 Some of the key analysis inputs that we  
25 used in our analysis are as follows: The Energy

1 Commission, in its fuel price forecast, developed  
2 a long-term average petroleum cost of \$22.50 a  
3 barrel. This was used throughout the analysis  
4 period for our work.

5 This led to a projected retail price of  
6 gasoline in the range of \$1.47 to \$1.81. This  
7 range is based upon a mid point price of \$1.64.  
8 We applied some statistical analysis to generate  
9 one standard deviation to that mid point price,  
10 and that led us to this range of \$1.47 to \$1.81.

11 A similar method was applied for diesel  
12 fuel. And as you can see, for the California  
13 regular unleaded that we modeled it's basically  
14 the same retail price as California diesel fuel.

15 Our fuel demand forecast was initially  
16 conducted out to the year 2020. We then  
17 extrapolated those results beyond that 2020  
18 original end point.

19 We used existing regulations and tax  
20 rates in our cost/benefit analysis. For example,  
21 there's a current tax rate for ethanol fuels. We  
22 maintain that tax rate throughout the analysis  
23 period, even though in the year 2007 that federal  
24 tax rate is supposed to sunset.

25 We also employed a societal perspective

1 on the expenses and benefits that come from these  
2 reduction options. We used a discounting rate of  
3 5 percent which means that expenses and benefits  
4 that occur in the future are discounted.

5 We only looked at onroad vehicles in  
6 terms of the fuel demand and the different  
7 petroleum reduction options. And we also assumed  
8 that there would be no new California refineries.

9 The next few slides will review some of  
10 the key results of our analysis. Clearly one of  
11 the key results is that improvements in vehicle  
12 fuel economy not only produce very positive cost/  
13 benefit results, but they also generate the  
14 largest reductions in future petroleum fuel use,  
15 up to 29 percent in the year 2020.

16 Some of the other options, though, like  
17 combining fuel efficient tires with proper tire  
18 inflation monitoring, those types of things can  
19 also reduce California petroleum demand in a cost  
20 effective way, but add a much smaller percentage  
21 of our basecase forecast.

22 Now, with a few exceptions, our analysis  
23 shows that alternative fuels apparently require  
24 public support for widescale deployment,  
25 especially for the fuel infrastructure. And what

1       that generally means is that these alternative  
2       fuels are fairly expensive compared to the current  
3       and estimated cost of petroleum-based  
4       technologies.

5               However, in the alternative fuel  
6       category, the use of liquified natural gas and one  
7       of the gas-to-liquid fuels, primarily a Fischer  
8       Tropsch diesel blend; those two fuels look very  
9       attractive in heavy duty vehicle applications.

10              We also believe that increased ethanol  
11       blending in gasoline, for instance going to an E10  
12       formulation, or perhaps in a larger ethanol  
13       content fuel that we call an optimal flexible fuel  
14       for FFVs. Those options should be examined in  
15       greater detail. We had some good results there,  
16       but they were somewhat inconsistent and we sort of  
17       believe that our analysis should be improved to  
18       produce some better results there.

19              Another key result, though, is that in  
20       order to achieve sustained and long-term reduction  
21       of petroleum fuels demand, this requires some  
22       aggressive efficiency improvements and alternative  
23       fuels.

24              The fourth point, we believe that a good  
25       alternative fuels portfolio rather than a single



1 potential fuel is an important -- can serve as an  
2 important hedge against some long-term climate  
3 change risks. And then to prevent potential over-  
4 reliance on natural gas, as that fuel begins to  
5 enter the transportation sector.

6 Now, just to illustrate some of the  
7 potential petroleum fuel reductions that might be  
8 achievable through some of these different  
9 reduction options. Here we show the expected  
10 demand levels if these options were to be deployed  
11 independently.

12 The first shaded line under our demand  
13 line, for instance, comes about from deployment of  
14 what we call near-term options. This includes  
15 more efficient tires, proper tire monitoring,  
16 efficient fleets for government, and I think there  
17 was one other option included in the near term  
18 that shows relatively small reductions, but  
19 nevertheless it does bring down that future  
20 demand.

21 The next line below the near-term  
22 options is a line showing how Fischer Tropsch  
23 diesel might reduce our future demand. This is in  
24 a 33 percent blend with conventional diesel.

25 We then moved to the third line. This

1 demand line would result, for instance, if we were  
2 to deploy hydrogen fuel cell vehicles beginning in  
3 2012, reaching a total new vehicle sales  
4 penetration rate of 20 percent in the year 2030.

5 And then we show two other examples here  
6 of the expected fuel demand if new vehicles could  
7 be produced with these average fuel economies.  
8 The first line there is a 30 mile per gallon fleet  
9 average for new vehicle sales.

10 And then the last line is an example of  
11 a new fleet fuel economy average of 40 miles per  
12 gallon. One of the key points that is illustrated  
13 in this slide, though, is that even with these  
14 aggressive fuel economy levels we can drop our  
15 demand. We can level it off. But eventually  
16 various growth factors begin to result in an  
17 increasing demand in the out years.

18 And so this tends to tell us that if you  
19 really want to keep your demand below some  
20 reasonable level and to maintain that demand level  
21 you really need something in combination with  
22 efficiency strategies.

23 One of the key results of our  
24 cost/benefit analysis is shown in this slide for  
25 the efficiency options that we evaluated. The

1 economic metric here is called direct net benefit.  
2 I really refer you to our technical appendices to  
3 fully understand the implications of that metric,  
4 what goes into it. We'll certainly be here to  
5 answer questions that you might have. And then  
6 we'll give everybody a test at the end of the  
7 session.

8 (Laughter.)

9 MR. FONG: This graph really again  
10 highlights the importance in value of the fuel  
11 economy cases that we evaluated. All of those  
12 bars that are to the right of this neutral, what  
13 we call the break-even point, for these options,  
14 those things to the right of that threshold  
15 indicate positive cost/benefit.

16 In other words, the consumers are better  
17 off if they were to choose one of these options  
18 over a basecase option. For instance, in one of  
19 the first fuel economy cases that is labeled EEA,  
20 that EEA stands for energy and environmental  
21 analysis, one of the consultants that we retained  
22 to help us evaluate some of these fuel economy  
23 cases.

24 That shows that if a consumer were to  
25 purchase, for instance, an average new vehicle

1       that has a roughly 28 mpg fuel economy, he's going  
2       to save money compared to the average gasoline car  
3       that is currently being purchased here in  
4       California.

5               And a similar comparison is then made  
6       through these other cases. The largest case with  
7       positive cost/benefit is the option labeled Air  
8       Resources Board mild hybrid. That has a new  
9       vehicle fleet fuel economy performance level of  
10      about 40 mile per gallon.

11             And I need to note that, for instance,  
12      the ARB mild hybrid is the same technological  
13      package as in the ACEEE mild hybrid. ACEEE stands  
14      for the American Council for an Energy Efficient  
15      Economy. They have produced a number of very  
16      detailed reports on various fuel economy measures.

17             The difference between those two  
18      analyses is in the economic assumptions. Whereas  
19      the ACEEE assumes some constant incremental  
20      vehicle costs for their technological evaluation,  
21      the ARB analysis uses a learning curve effect. We  
22      have slightly higher incremental battery costs in  
23      the early years. But those battery costs will  
24      come down over time. And that difference then  
25      results in this different cost/benefit result.

1           We believe that they still merit  
2       consideration, even though these cost differences  
3       may be not the same. We still think that this  
4       analysis is representative of what the consumer  
5       cost/benefit might be.

6           Now we've broken out that cost/benefit  
7       calculation into the three primary economic  
8       components. In the previous graph you saw that  
9       the direct net benefit was the sum of three  
10      different components. Those components are now  
11      displayed on this particular slide for a specific  
12      fuel price of \$1.64 a gallon for gasoline. The  
13      other slide I showed was for the range of fuel  
14      prices and incremental vehicle prices that we used  
15      in our analysis.

16          So here again you can see the relative  
17      importance and magnitude of the three different  
18      economic components that went into our final net  
19      benefit calculation.

20          The black section of the bar is for the  
21      external costs of petroleum dependence. In a  
22      sense, this is the avoided cost if you were to  
23      reduce your petroleum fuels consumption.

24          The white segment of the bar is the  
25      direct environmental net benefit value. And that

1 includes air quality benefits due to either  
2 reduced petroleum fuels consumption or some fuel  
3 substitution option, although not in this  
4 particular slide. It also includes the effect of  
5 global climate change benefits and reduced  
6 environmental damage due to spills of petroleum  
7 and petroleum products.

8 The herringbone section of the bar is  
9 the direct non environmental net benefit. That is  
10 primarily the incremental cost of the option being  
11 evaluated along with the fuel-related costs for  
12 that particular option.

13 And so in the efficiency options the  
14 latter component tends to dominate. And that's  
15 primarily because of some of the fuel price  
16 assumptions that we made in the analysis.  
17 Although significant, the other two components are  
18 smaller in their absolute magnitude.

19 We show a similar slide for the fuel  
20 substitution options. I need to point out,  
21 though, that the integrated benefits for the fuel  
22 efficiency options cannot be directly compared to  
23 the integrated benefits for the fuel substitution  
24 options. And I'll explain that a little bit  
25 later.

1           Here, again, we show that there are a  
2       few of the fuel substitution options that cross  
3       over this threshold line. They are positive and  
4       therefore they look like good investments in terms  
5       of reducing your future petroleum fuel demand.

6           The third one down, that's our Fischer  
7       Tropsch diesel. That is used in a 33 percent  
8       blend with conventional diesel.

9           Go down further, right below the Fischer  
10      Tropsch diesel bar is a bar for liquified natural  
11      gas in heavy duty vehicles. That one tends to  
12      straddle that line, but if we were to blow this up  
13      you could see that a majority of that bar is in  
14      the positive section of the graph.

15          And then further on down you'll see what  
16      we call the low cost flexible fuel vehicle option  
17      also looks very good, although we need to improve,  
18      I think, some of our costs and price assumptions  
19      on that analysis before we have good confidence, I  
20      guess, that that, in fact, can be achieved in the  
21      real world. And so we would like to upgrade our  
22      analysis in the future on that particular option.

23          Also above it we show two other results  
24      for the ethanol increased use of ethanol cases.  
25      Those don't look very positive, and yet we still

1 believe that by upgrading some of the analytic  
2 components that went into those analyses, we may  
3 see much more positive results. And we believe  
4 that particular option certainly merits that  
5 additional analysis in the future.

6 Lower down on this chart we've hit the  
7 various fuel cell options that we evaluated. We  
8 looked at a gasoline fuel cell based case along  
9 with a methanol based case; and then finally a  
10 direct hydrogen fuel cell option.

11 In certain instances where fuel prices  
12 and incremental costs are more positive those fuel  
13 cell options begin to cross over into the positive  
14 side of our cost/benefit comparison.

15 We again have broken out the net direct  
16 benefit into the three cost components as we did  
17 in the fuel efficiency options. Again, the  
18 overall net benefit is dominated by the direct non  
19 environmental net benefit. But, I think I need to  
20 point out, though, that one of the key assumptions  
21 that we made when evaluating the environmental  
22 benefits is that the future basecase vehicle that  
23 we are comparing these various options to. That  
24 vehicle will be an extremely low-emitting vehicle  
25 meaning the PZEV emission standard that has been



1       adopted by the Air Resources Board.

2               And so these various efficiency options  
3       and fuel substitution options will have to meet a  
4       very very strict emission performance level, and  
5       therefore any benefits that come from those, at  
6       least in the environmental area for air quality,  
7       are relatively small compared to the other  
8       components of the direct environmental net benefit  
9       calculation. And we can go into greater detail if  
10      you so wish after I complete the presentation.

11             Now, in developing a fuel reduction  
12      goal, the Air Resources Board and the Energy  
13      Commission Staff used these following principles:  
14      We wanted to identify options that provide  
15      substantial reductions in petroleum fuel demand.  
16      Those options should have a net positive societal  
17      benefit that is the direct net benefit, should be  
18      positive.

19             We also wanted to identify a possible  
20      pathway to actually achieve a recommended goal  
21      that would one, eliminate growth in demand for  
22      gasoline and diesel fuel. That goal would also  
23      reduce the demand to some level below a base level  
24      that we use in the year 2003.

25             And then finally we wanted to identify a

1 package of options that we believe can be used to  
2 reasonably achieve that goal.

3 On this slide we are showing then the  
4 actual potential strategy that might achieve the  
5 proposed petroleum reduction goal. We are  
6 selecting that that reduction goal be 15 percent  
7 below the 2003 demand level. And this particular  
8 graph shows that a strategy that includes our  
9 near-term options, the deployment of Fischer  
10 Tropsch diesel, a 40-mile-per-gallon new-vehicle  
11 fleet fuel economy standard, and the introduction  
12 of hydrogen fuel cell vehicles beginning in 2012.  
13 And then increasing in penetration out to the year  
14 2030.

15 That particular strategy meets that goal  
16 and is able to sustain and maintain that goal  
17 beyond the year 2030.

18 And so how did we sort of build up a  
19 particular strategy that might then achieve that  
20 fuel reduction goal? This slide shows the  
21 incremental improvements or fuel demand reductions  
22 that would be generated through the deployment of  
23 these various options.

24 The first solid line below our  
25 extrapolated demand line is the deployment of the

1 near-term options. The green line then is the  
2 addition of Fischer Tropsch diesel to that near-  
3 term option line.

4 We subsequently add the decrements due  
5 to a 40-mile-per-gallon light-duty vehicle  
6 deployment. And then finally, if we deploy  
7 alternative fuel vehicles, in this case a hydrogen  
8 fuel cell case, to a 20 percent new vehicle sales  
9 level, we can then achieve in a reasonable manner  
10 the goal that we have defined.

11 So, I will read, word-for-word, our  
12 proposed staff recommendations:

13 First, the Governor and Legislature  
14 should adopt the recommended statewide goal of  
15 reducing demand for onroad gasoline and diesel, a  
16 15 percent below the 2003 level by 2020.

17 Second, the Governor and Legislature  
18 should work with the California delegation and  
19 other states to establish national fuel economy  
20 standards that double the fuel efficiency of new  
21 cars, light trucks and SUVs.

22 Third, the Governor and Legislature  
23 should establish a goal of 10 percent alternative  
24 fuel use by 2020.

25 And then we also follow that up with

1 another recommendation that the Energy Commission  
2 and the ARB however are still in the process of  
3 considering.

4 Now, for those of you who have actually  
5 accessed the staff documents on our website as of  
6 May 5th or got a hard copy of those documents,  
7 you'll note that there are two changes to these  
8 recommendations.

9 So what I'm showing now is the updated  
10 set of recommendations. The staff discovered a  
11 technical inconsistency in its analysis for the  
12 alternative fuel effect. When corrected that  
13 technical inconsistency lowers the contribution  
14 from alternative fuels in reducing petroleum fuels  
15 demand.

16 In the original report the third  
17 recommendation had a 15 percent figure. That has  
18 now been adjusted to 10 percent and is reflected  
19 in this slide.

20 And then in our first recommendation the  
21 goal was originally proposed of using the year  
22 2000 base level as the point of measurement. That  
23 has now been adjusted to the base level in the  
24 year 2003.

25 And in any event our analysis shows that

1       beyond 2020 we need to implement additional  
2       measures in order to maintain that 15 percent  
3       demand reduction target. We believe that our  
4       analysis also shows that this target can be  
5       maintained through the additional penetration of  
6       alternative fuels. And that's why we are still  
7       considering extending that alternative fuels goal  
8       to 18 percent by 2020.

9               We certainly invite your comments on  
10       this proposed extended goal.

11              Finally, in summary, some of the key  
12       next steps. Susan Brown mentioned this in her  
13       opening remarks. We have set a deadline of June  
14       6th for public comment on the draft final report  
15       and all of the technical appendices.

16              On that same day a joint Energy  
17       Commission Committee and ARB hearing would be  
18       conducted to receive final public comment. You  
19       may also ask additional questions of the  
20       Commission and the ARB at that hearing.

21              And then finally if the Energy  
22       Commission Committee assigned to this proceeding  
23       and the ARB Chairman believe that they can move  
24       recommendations to their full governing boards,  
25       the Air Resources Board, at one of its regularly

1 scheduled meetings, would consider adoption of the  
2 staff reports. And the Energy Commission would do  
3 so, as well, on about June 25th.

4 So, we will now open up the meeting to  
5 general questions. I also want to acknowledge the  
6 contributions from one of our technical  
7 consultants. I believe they are in attendance in  
8 the audience, a representative from TIAX is here  
9 this morning, as well. So if we are not able to  
10 answer some of the more detailed questions,  
11 hopefully TIAX might be able to chime in, or we'll  
12 try to provide a more detailed written response if  
13 we go into too many mind-boggling explanations.

14 Okay, thank you.

15 MS. BROWN: Thank you, Dan. I'm going  
16 to ask people to come forward to the microphone;  
17 state your name for the record; spell your name  
18 for the reporter, please; and make your comments.

19 And I guess we'll start with Kathryn.

20 MS. PHILLIPS: Kathryn Phillips. I'll  
21 make other comments later, but I'm curious, Dan,  
22 if you could explain in greater detail the change  
23 from 2000 to 2003 in the first recommendations.  
24 And also the 10 percent versus the 10 percent for  
25 alternative fuels. How does that look on the

1 graph that --

2 MR. FONG: The graphs we've shown are,  
3 in fact, the results of the revised basecase  
4 demand level and revised projections for the  
5 different alternative fuel case that we chose to  
6 illustrate how you might achieve that demand  
7 level.

8 I think I might have been remiss in  
9 saying that our strategy is not necessarily a  
10 prescription. That is we believe that we've  
11 selected some of the more promising reduction  
12 options that look very positive. We deployed  
13 those options in a certain fashion.

14 There are, though, many different ways  
15 for the private sector to actually implement those  
16 kinds of reduction options.

17 And so we believe there is considerable  
18 flexibility in how one might go about achieving  
19 the reduction goal that we are proposing to  
20 establish.

21 Gerry.

22 MR. BEMIS: Point of clarification.

23 MS. BROWN: State your name.

24 MR. BEMIS: Gerry Bemis, Energy

25 Commission Staff. We did not revise the basecase

1 forecast. You included that when you described  
2 the revisions, we did not revise the basecase  
3 forecast. We revised only the alt fuel decrease  
4 portion of the reductions. We did not revise  
5 anything else.

6 MS. PHILLIPS: I'm a little dense. When  
7 you're saying 15 percent below the 2003 level, and  
8 I'm looking at the graph on page 9 of the staff  
9 draft report, would this graph look different?

10 MR. BEMIS: The horizontal line moves  
11 from 14.8 to 15.5.

12 MS. PHILLIPS: Okay, thanks.

13 MS. BROWN: I have three blue cards here  
14 that folks have signed up to make comments. I  
15 think I'll call on them next, and then ask others  
16 to step forward.

17 Dr. Frank, would you like to speak?

18 DR. FRANK: Can I put up a couple  
19 slides?

20 MS. BROWN: I'm not sure that's going to  
21 be logistically possible.

22 DR. FRANK: Well, if it's not possible,  
23 that's all right.

24 I'd like to comment first that the --

25 MS. BROWN: State your name, I'm sorry,



1 Dr. Frank, you have to state your name and spell  
2 it for the record.

3 DR. FRANK: Oh, excuse me. Professor  
4 Frank at the University of California at Davis.  
5 And I've been a proponent of plug-in hybrids and  
6 the concept of plug-in hybrids for a number of  
7 years and --

8 MS. BROWN: You have to speak into the  
9 microphone, Andy, I'm sorry.

10 DR. FRANK: Excuse me, yeah, all right.  
11 Is that better? So I've been a proponent of plug-  
12 in hybrids for a number of years, and we have  
13 demonstrated that these kinds of vehicles can be  
14 constructed and can be a part of the vehicle mix  
15 if we can only get the car companies to build  
16 them.

17 And in terms of fuel savings, we have  
18 been working with the Electric Power Research  
19 Institute, EPRI, and car companies, and actually  
20 CEC and CARB, as well; and we have demonstrated  
21 that there is really a high potential of saving  
22 fuel if you build a car that can use both  
23 electricity and gasoline.

24 Some of the things that were part of the  
25 problem was that the plug-in hybrid was going to

1       be higher cost, but not higher cost than the fuel  
2       cell vehicle.

3               The most important thing was that we  
4       found -- oh, first, I must say, relative to this  
5       report, I think this report is a very good,  
6       comprehensive report that has the right conclusion  
7       and the right recommendation. I would like to see  
8       it embellished a little more.

9               I think when the report analyzed the  
10       plug-in hybrid they analyzed only one style of  
11       plug-in hybrids. There are more than one style of  
12       plug-in hybrid. The vehicles that we designed and  
13       constructed at the university were plug-in hybrids  
14       that could achieve 60 miles of all electric range.  
15       That means you could drive the first 60 miles of  
16       you day all electrically.

17              But that's the outer range of the plug-  
18       in hybrid; and it's a little more expensive due to  
19       the cost of batteries.

20              However, you could build a plug-in  
21       hybrid with only a 20-mile range. And our  
22       analysis with EPRI and car companies indicate that  
23       such a hybrid could be, in actual fact, lower in  
24       cost than the conventional car because of the  
25       simplification and the introduction of electronic

1 technologies into the power train system.

2 So, I think this is something that  
3 should be included in the analysis and maybe  
4 updated. And we're also showing in the new report  
5 from EPRI that the cost of batteries -- excuse me,  
6 the life of batteries can meet the life of the  
7 car. In other words it can last as long as  
8 essentially the engine, 150,000 miles plus.

9 So, data on current batteries, today's  
10 batteries begin to show that this plug-in hybrid  
11 concept is a feasible thing.

12 What we need to do is encourage the car  
13 companies to build these vehicles, of course.

14 So the gist of what I have to say here  
15 is, let me just summarize. The three  
16 recommendations are good, but I think a bit on the  
17 conservative side. Chart 8, the chart on page 8  
18 of the summary should be clarified so as to not  
19 discourage or rank alternative fuels. That  
20 includes use of electricity off the wall.

21 The report should clarify that P60 was  
22 the only plug-in hybrid studied. And other plug-  
23 in hybrids with ranges from 20 miles to 60 miles  
24 should be included in the study. And if time  
25 allows, and the project is extended, then other

1 suggested improvements in plug-in hybrids should  
2 be made.

3 So, --

4 MS. BROWN: Thank you, Dr. Frank. We  
5 would certainly invite any information you'd like  
6 to submit for the record to assist in these --

7 DR. FRANK: We'll do that before the  
8 June 6th --

9 MS. BROWN: -- deliberations and in  
10 finalizing the report following the June 6th  
11 hearing.

12 Any comments or questions from the panel  
13 on Dr. Frank's comments?

14 MR. WUEBBEN: Yeah, Dr. Frank, I've got  
15 a question. This is Paul Wuebben. I heard from  
16 one of your colleagues at one of the utilities  
17 that there may be perhaps a misperception of plug-  
18 in hybrids at the consumer level; that it might be  
19 constructive to label them as grid optional rather  
20 than as grid connected, which perhaps the label  
21 may imply the absolutely requirement for plug-in,  
22 which, of course, it not true.

23 I wonder if you have some suggestions or  
24 ideas on what role that might play in terms of --

25 DR. FRANK: Yes, thank you --

1           MR. WUEBBEN:  -- if you can make any  
2           suggestion there?

3           DR. FRANK:  -- for bringing that up.  
4           Yeah, thank you for bringing that up, Paul.  One  
5           of the perceptions, and the car companies have all  
6           commented, well, if you build a car that uses both  
7           electricity and gasoline nobody will ever plug it  
8           in.

9           But what they don't say in the same  
10          breath is that if you plug it in it's like being  
11          able to buy gas at 50 cents a gallon.  So why  
12          wouldn't you plug it in, unless you want to pay  
13          more to go from point A to point B, three times  
14          more or so.

15          My comment on that statement is yes, we  
16          should change the statement to reflect that they  
17          don't have to be plugged in, but that there is an  
18          economic incentive so powerful, a three-to-one  
19          difference in price is a pretty powerful economic  
20          incentive, that people will plug in just to save  
21          the money from going from point A to point B.

22          MR. BEMIS:  Susan, can I comment, too?

23          MS. BROWN:  Yes, surely.

24          MR. BEMIS:  I guess first of all let me  
25          say hopefully everybody knows that I think Andy

1 does just great work. I really do respect all the  
2 great work you've done at UC Davis. And I look  
3 forward to your continued success.

4 We did use an assumption that the  
5 batteries would last the life of the vehicle for  
6 both the battery electrics and the plug-ins. We  
7 used the, was it the year 2000 ARB battery  
8 report --

9 UNIDENTIFIED SPEAKER: Yes.

10 MR. BEMIS: -- data for the cost of the  
11 batteries, for the plug-ins and for the battery  
12 electrics. And just yesterday -- Susan doesn't  
13 know this because she was out of town, but just  
14 yesterday I was able to get a copy of the new EPRI  
15 report. And I haven't had much chance to digest  
16 it; I just had a chance to print it out.

17 But it looks like there are some real  
18 world onroad data from Toyota, I think it was,  
19 that indicated that these longer batteries should  
20 last, you know, 80 to 100 or more thousand miles  
21 per year which is certainly good news.

22 I haven't been able to really get my  
23 hands around the cost assumptions, the  
24 differences, but that can certainly help, too.

25 DR. FRANK: This is fundamental to some

1 of our comments, that if you get a report, has not  
2 only additional battery data, but also has  
3 additional data on plug-in concept.

4 MR. BEMIS: Yeah, you're right. We used  
5 the P60; we did not -- because we were looking for  
6 maximum petroleum displacement. And we didn't  
7 look at other -- probably should have, but we  
8 didn't look at the B20.

9 DR. FRANK: Incidentally, the B20, just  
10 to give you some figures, petroleum displacement  
11 is not as much as the P60, but it's like a quarter  
12 to a -- excuse me, it's somewhere around a third  
13 to a 40 percent of the fuel used by a conventional  
14 car. So it's significant.

15 MR. BEMIS: To me that's just good news.  
16 What Dan mentioned, what we came up with was one  
17 pathway out of many that could be used to help us  
18 meet the goal, just to identify the fact that this  
19 goal is a reasonable goal to have.

20 There are other components and other  
21 technologies that could be included in the goal  
22 and simply increase the probability of actually  
23 meeting the goal. So that's just wonderful news.

24 DR. FRANK: Yeah. So, anyhow, that's --  
25 if that new report is included I think that will

1 help, that will be good.

2 MR. BEMIS: Which hasn't yet been  
3 published.

4 DR. FRANK: Yeah, that's right.  
5 Unfortunately it's just come out, it's new.

6 MS. BROWN: We appreciate that input.  
7 Thank you very much.

8 DR. FRANK: Okay. Any other questions?

9 MS. BROWN: Any questions for Dan, Dr.  
10 Frank, while you're up there any further questions  
11 for the staff or --

12 DR. FRANK: Sure.

13 MS. JONES: I'm Melissa Jones,  
14 Commissioner Geesman's Adviser.

15 MS. BROWN: Yes, please come forward  
16 and --

17 MS. JONES: And I just had a quick  
18 question. You said there's substantial benefits  
19 from grid connection. Can you tell me what  
20 electricity price you're using in that  
21 calculation?

22 DR. FRANK: I believe that was 6 cents a  
23 kilowatt hour.

24 MS. JONES: Okay.

25 DR. FRANK: Well, you know, people



1 laugh, but 6 cents a kilowatt hour is nighttime  
2 rates that are charged. And one of the key things  
3 about a plug-in hybrid, in the first place you  
4 don't have to charge plug-in hybrid -- electric  
5 car, because you don't need to charge for a short  
6 length of time. You charge while you sleep.

7 And the average car in California is  
8 used three hours a day. That means you have 21  
9 hours to charge the car. So you can charge with  
10 110 volts. You don't need a special  
11 infrastructure. That's another critical part of  
12 plug-in hybrids.

13 So I hope these things are included.  
14 That 6 cents a kilowatt hour is maybe a little bit  
15 low; but even if you double that you're still much  
16 less than going from point A to point B, still  
17 much less than paying for gasoline at \$1.50 a  
18 gallon. All right?

19 MS. BROWN: Thank you very much. We're  
20 going to call on Jerry.

21 MR. FONG: Susan, before we go there I  
22 need to point out a slight error in our slide  
23 presentation. When I used the words word-for-word  
24 that was incorrect.

25 Our first recommendation actually has

1       some additional phrasing at the end of the  
2       recommendation. So instead of just ending by  
3       2020, there's actually an additional part of that  
4       recommendation which says, "and maintain that  
5       level for the foreseeable future."

6               So I need to point that out to everybody  
7       in the audience, and then also make a correction  
8       to the record on that.

9               MS. BROWN: Thank you, Dan. Dr. Frank,  
10       thank you very much. Jerry Pohorsky.

11              MR. POHORSKY: Hi, I'm Jerry Pohorsky,  
12       concerned citizen. The last name is spelled  
13       P-o-h-o-r-s-k-y.

14              I like your analysis, Dan. I think it's  
15       excellent work. And I like the fact that you're  
16       not just looking at one alternative, but a variety  
17       of options. In my driving history I've driven  
18       propane vehicles, electric vehicles and a flexible  
19       fuel vehicle that runs on methanol.

20              One question for you, you looked at E85  
21       as one of the alternative fuels. M85 was not  
22       mentioned, although I know that the Energy  
23       Commission did have a methanol fuel reserve during  
24       the 1990s and I was one of your customers. And I  
25       thought it was a very great program. Do you want

1 to comment on that or --

2 MR. FONG: We had to make some choices  
3 early on when we were establishing the workplan  
4 for this work. And we did make somewhat of an  
5 arbitrary decision to evaluate the ethanol option.

6 I think we saw essentially large numbers  
7 of automobiles being built by manufacturers that  
8 are fully ethanol capable. And so we wanted to  
9 evaluate the potential of using that existing  
10 fleet and the existing direction being taken by  
11 the automotive industry to introduce that  
12 technology.

13 It was not meant to discourage the  
14 possibility that methanol might be a viable  
15 option, as well. But we had to make some choices  
16 in the number of different options that we  
17 evaluated. And in this particular case we decided  
18 to emphasize this particular ethanol opportunity.

19 MR. POHORSKY: Great, thank you. And  
20 that kind of leads into the three A's that I have  
21 for these from a consumer point of view. The  
22 alternatives need to be available now. They need  
23 to be affordable, and they need to be attractive.

24 And of all the alternatives I've seen at  
25 this workshop and previous ones, the alcohol fuel,

1 the biodiesel, electric vehicles, propane and  
2 compressed natural gas, to me, meet all of those  
3 three A's.

4 So I would say that those would be the  
5 ones that I would really support. And I think  
6 other customers like myself could easily find  
7 themselves filling up a propane vehicle, filling  
8 up a natural gas vehicle.

9 For the audience that may not be aware  
10 there was a company in Canada called Fuel Maker.  
11 And nearly all of the natural gas fueling stations  
12 that are out there now are made by that company.  
13 They are introducing a home fueling device that  
14 they expect to make available for about \$1000  
15 cost. It plugs into a 110 volt outlet; ties into  
16 your home natural gas line; and allows you to fuel  
17 something like your natural gas Honda on an  
18 overnight basis. So, I think something like that  
19 will be very attractive to the consumer.

20 And in my own case right now I'm driving  
21 an electric vehicle. It's a 1998 technology,  
22 General Motors, Chevy S10 truck. Got me all the  
23 way here from Santa Clara to Sacramento. I'm  
24 charging it in your state, or your city garage  
25 right now. And I'm not being charged anything for

1       that charging and I'm getting free parking, as  
2       well.  So that's my preferred mode --

3               (Laughter.)

4               MR. POHORSKY:  But you talk very  
5       favorably about the potential for the hydrogen  
6       fuel cells.  However, I found another PowerPoint  
7       presentation that was presented at the ARB  
8       workshop in March that I can show you, if you  
9       like, that shows that the electric car is more  
10      than twice as efficient as the hydrogen fuel cell.

11              So, if you're looking at overall  
12      efficiency I wouldn't bet on hydrogen fuel cells  
13      being there, not to mention the infrastructure  
14      hurdle.

15              And in terms of the range of the  
16      electric cars, I've got another PowerPoint  
17      presentation that shows the new lithium polymer  
18      batteries that are being used successfully now in  
19      laptop computers and cell phones that will  
20      effectively increase the range of something like  
21      an ED1 car from about 120 miles with a nickel  
22      metal hydride battery up to 300 miles range, which  
23      would get me all the way from home to here without  
24      using your free electricity, and then back again.  
25      No refueling involved.

1           So those are the options that I really  
2           think have a lot of potential for the customer.  
3           After all, we're the ones that are paying the  
4           taxes that fund your salary. We're the ones that  
5           are paying the taxes that the oil companies add  
6           onto the price at the pump to meet the  
7           requirements there.

8           So, really the customer is paying for  
9           all of this, so we might as well get our money's  
10          worth. Thank you.

11          MS. BROWN: Thank you very much. Are  
12          there comments from the panel?

13          MR. FONG: I'd like to again remind  
14          everyone that our analysis includes a variety of  
15          different characteristics. Efficiency is  
16          definitely an important aspect of our analysis.

17          Overall we are looking at a cost/benefit  
18          result that tells us whether or not a consumer or  
19          an average consumer might be better off if he made  
20          one choice versus a standard basecase choice.

21          And so efficiency, which might be  
22          interpreted as part of the environmental benefits,  
23          that's clearly an important component of our  
24          metrics, but it is not the only one.

25          MS. BROWN: Okay, thank you, Dan. Next

1 Tim Castleman.

2 MR. CASTLEMAN: Thank you. My name is  
3 Tim Castleman; I'm a concerned citizen, also.  
4 Live here in Sacramento. I was born here in  
5 Sacramento. And I remember when we could see the  
6 mountains 40 years ago, a little over 40 years  
7 ago.

8 I really want to congratulate you on  
9 your work. I couldn't possibly print it all out  
10 on my little bubble jet printer, so I'm really  
11 glad to get my hands on that. And I read as much  
12 as I could on the computer screen since it's come  
13 out on May 5th.

14 I just wanted to kind of bring another  
15 little aspect into the picture here that I don't  
16 hear mentioned at all. I want to encourage the --  
17 by the way, I submitted this to Susan by email  
18 this morning at 4:00. So I don't know how she  
19 could have possibly printed it out. But it's also  
20 available on the website. You can download it and  
21 print it out, yourself, if you're interested.

22 So I want to encourage the CEC and ARB  
23 Staff to include a more complete evaluation.  
24 Reporting the benefits that would accrue if the  
25 state enacts the legislation and the executive

1 branch issues directives to enforce the existing  
2 speed limits. And consider re-enacting the 55  
3 mile per hour speed limit on all the highways in  
4 the State of California.

5 There simply is no single measure that  
6 could realistically achieve both near- and long-  
7 term benefits and to reduce our dependency on  
8 petroleum as effectively as this.

9 When driving 65 miles an hour you are  
10 using 20 percent more fuel, polluting 58 percent  
11 more VOCs, 153 percent more CO and between 10 and  
12 30 percent more NOx. These analyses can be found  
13 on EPA's website. I give the URL here on this.  
14 For the environmental impacts that's also, this  
15 study was done by EPA in, I think, '95.

16 Also Bridgestone Tire manufacturing has  
17 tested the fuel economy effects of speed, load and  
18 tire-related factors at the transportation  
19 research center in East Liberty, Ohio, and at the  
20 Bridgestone/Firestone Test Center in Fort  
21 Stockton, Texas. So these aren't just numbers  
22 that I dreamed up.

23 I think everybody would have to agree a  
24 20 percent reduction exceeds what we're trying to  
25 get here with all these other measures.



1           Regarding California Highway Patrol John  
2 Keller's prior testimony, he makes an important  
3 point when he states that the real problem is one  
4 of attitude adjustment. So let's talk about  
5 safety.

6           In the year 2002 42,850 people were  
7 killed on U.S. roadways. Of these, 2584 were  
8 children under the age of 15. 2,914,000 people  
9 were injured by U.S. motorists. Of these, 334,000  
10 were children under the age of 15.

11           4,776 were pedestrians. Of these, 646  
12 were on bicycles. 72,000 pedestrians were injured  
13 by cars; 48,000 bicycle riders were struck and  
14 injured by cars.

15           Young drivers between the ages of 16 and  
16 20 will account for 8996 deaths and 544,000  
17 injuries. This is all statistics from the April  
18 of 2003 Motor Vehicle Traffic Crash Fatality and  
19 Injury Estimates, published by the National  
20 Highway Traffic Safety Administration. I give the  
21 URL for these, also.

22           Traffic fatalities has steadily risen  
23 since 1995, the year the national 55 mile an hour  
24 speed limit was rescinded. So has fuel  
25 consumption risen.

1           Is it any safer to walk? One pedestrian  
2       is killed by a car every 108 minutes. In 2001  
3       4882 pedestrians were killed on America's roads.  
4       This was 12 percent of the 42,116 traffic  
5       fatalities. The reason I point that out is  
6       because it shows that traffic fatalities are, in  
7       fact, rising from 42,116 to 42,850; 484 of those  
8       pedestrians were children under 16.

9           45 percent of those 484 children were  
10      killed by cars between 3:00 and 7:00 p.m. Alcohol  
11      was involved in 37 percent of these fatalities.  
12      That is from a pedestrian roadways report also  
13      published in April 2003. And I give the URL here.

14           So, from a safety standpoint, slowing  
15      down makes sense, too.

16           I have a few more points I'd like to  
17      make briefly. Enforcing the existing speed limit  
18      laws would create a new revenue stream for the  
19      state.

20           (Laughter.)

21           MR. CASTLEMAN: While only penalizing  
22      those with little or no regard for our environment  
23      and safety anyway. Modifications to the vehicle  
24      registration system to consider weight and  
25      horsepower when calculating annual vehicle

1 registration fees. This would equitably  
2 distribute the actual cost to drivers, rewarding  
3 those who choose sane vehicles, while allowing  
4 others the freedom to drive whatever they want as  
5 long as they pay their fair share.

6 It would also serve the public if the  
7 report were to give greater consideration to two  
8 alternative fuels that are only briefly mentioned,  
9 biodiesel and ethanol. Biodiesel can easily be  
10 made from the waste product fryer oil, which many  
11 are paying to have hauled away now.

12 Small scale, localized production can be  
13 encouraged within an educational outreach program  
14 and by supporting the many grassroots groups  
15 already active in this easy environmentally  
16 healthy activity. They need help with equipment,  
17 materials and supplies, classes and a set of  
18 guidelines that doesn't favor big business and  
19 make them criminals for making their own fuel.

20 Ethanol could be a real boon to the  
21 agricultural sector. California has about 10  
22 million acres of farmland under cultivation now,  
23 with over half of that used to grow food for  
24 animals.

25 A California Department of Food and

1       Agriculture estimate suggests that each one  
2       million acres of energy crop production occupying  
3       roughly 1 percent of the state's total land area  
4       would supply the ethanol equivalent of about 3  
5       percent of California's current gasoline demand.

6               The facilities could also convert  
7       landscape waste, forest trimmings and other  
8       agricultural waste to supply at least a billion  
9       gallons of ethanol each year to go into our E85  
10      cars.

11             I know our time is limited. I've got 16  
12      more pages I'm not going to bother you with. But  
13      it's there. And all the facts are there, and the  
14      references and studies after studies after studies  
15      when the fight was on to raise the speed limit  
16      from 55 to 65. It's just a sane move. And it's  
17      not even remotely addressed in this great study.  
18      I mean it's a terrific study. I'll use this for  
19      ammunition for a lot of things, but when we're  
20      talking societal benefits and a real reduction in  
21      petroleum use there's a real simple thing that  
22      could be enacted right now without any cost  
23      whatsoever, really.

24             As a matter of fact there would be a  
25      tremendous societal benefit, especially to our

1 children. Thank you.

2 MS. BROWN: Thank you, Mr. Castleman.

3 Are there comments from the panel?

4 And, Mr. Castleman, you know that we did  
5 evaluate the reducing speed limit option as part  
6 of the task 3 report. And it was the Highway  
7 Patrol, I think, that did express reservation  
8 about their ability to enforce any higher speed  
9 limit. So we did look at that issue.

10 MR. CASTLEMAN: I spoke with --

11 MS. BROWN: It's not --

12 MR. CASTLEMAN: I have spoken with Mr.  
13 Keller. I called him on the phone and discussed  
14 the issue with him. And he pointed out that that  
15 is, it is an attitude adjustment problem. It's  
16 getting people to do it is the hard part, you  
17 know. And that's why I say there has to be a  
18 financial incentive.

19 And if you know that breaking the speed  
20 limit -- I mean we've already got a 55 mile an  
21 hour speed limit on the Cap City Freeway right  
22 now. But nobody cares because you don't have to  
23 worry, you're not going to get pulled over. If we  
24 started pulling people over and charging them a  
25 couple hundred bucks for doing it, I bet you

1       they'd slow down. It worked before; it could work  
2       again. To dismiss it with two paragraphs by John  
3       Keller is not, to me, as exhaustive a study as  
4       this body is capable of.

5               Thank you.

6               MS. BROWN: All right, thank you.

7               MR. WUEBBEN: Mr. Castleman, I actually  
8       have one other question I'd like to ask you. You  
9       made a comment about the weight and power factor  
10      as a possible basis for vehicle registration fees.

11              Do you have any specific suggestions  
12      there?

13              MR. CASTLEMAN: Specifically horsepower  
14      and --

15              MR. WUEBBEN: I mean in dollar terms, or  
16      would you --

17              MR. CASTLEMAN: No. No, this would be  
18      another area I'd recommend for your study, would  
19      be, I think it's an area overlooked, that's all.

20              MR. WUEBBEN: Thank you.

21              MR. CASTLEMAN: Thank you.

22              MS. BROWN: All right, thank you very  
23      much. I have one more blue card and then I'm  
24      going to open it up to the audience. Stephanie  
25      Williams representing the California Trucking

1 Association.

2 MS. WILLIAMS: Good morning. I'd like  
3 to start out by saying the California Trucking  
4 Association supports the 55 mile an hour speed  
5 limit.

6 (Laughter.)

7 MS. WILLIAMS: And we'd like that to be  
8 in the SIP and get credit for it.

9 We have a limited narrow interest in  
10 what you're doing here and it has to do with the  
11 Fischer Tropsch additive in the diesel. And as  
12 you know, there's a problem when you have a  
13 different fuel in California than you have in  
14 other states, especially with the onset of NAFTA.

15 And although we've been successful in  
16 stopping NAFTA until an environmental assessment  
17 is completed, if California moved to a Fischer  
18 Tropsch type diesel and the rest of the nation  
19 didn't, we would be the Mexican Trucking  
20 Association, Western State Trucking Association.  
21 There would not be a California Trucking  
22 Association.

23 So somewhere in this report we need to  
24 reflect flight, and the cost differential and the  
25 increased vehicle miles traveled. Because

1       reducing the fuel in California from California-  
2       based trucks, increasing the miles and the fuel  
3       purchased elsewhere and burned in California is  
4       counterproductive to the state, as far as the  
5       highway account, as far as the excise taxes, as  
6       far as sales tax coming in for fuel.

7               So those need to be reflected in this  
8       report; very very important. You can't have clean  
9       air if you have loopholes. And right now we have  
10      three computer programs that teach interstate  
11      trucks how to avoid fueling in California.

12             So I'd like that to be reflected in the  
13      report.

14             MS. BROWN: Okay, let me understand your  
15      major concern. Cost, the cost of the fuel is your  
16      major concern, is that correct? I know your  
17      trucking association members are very sensitive to  
18      cost.

19             MS. WILLIAMS: Cost differential between  
20      bordering states and now Mexico and Canada.

21             MS. BROWN: If a fuel like a gas-to-  
22      liquid diesel could be brought into California at  
23      a cost equal to or less than existing diesel,  
24      would you support that?

25             MS. WILLIAMS: We would, yes.



1 Especially if it was less. But, history shows  
2 that that can't happen without a national fuel  
3 standard. And people who do specialty fuels want  
4 to be compensated for it. The market becomes  
5 closed. You have very few suppliers whose profit  
6 margins increase dramatically while the profit  
7 margins of the people who have to use the fuel  
8 decrease dramatically.

9 And we see that right now in our state  
10 highway account. We're short \$250 million because  
11 California-based registration has dropped.  
12 Unfortunately, there's been increases in overall  
13 registration. There's now 1.5 million interstate  
14 trucks. People can drive from Arizona to L.A. and  
15 compete with us against -- on I-5 and 99 for  
16 freight. We can't compete in our own state.

17 So, let's just be fair. And we know  
18 that even if -- we know the internal cost of  
19 Fischer Tropsch. We also have worked with the  
20 Department of Energy and Fairbanks Group over the  
21 years on Fischer Tropsch diesel. We know where  
22 it's being produced; we know the cost; we  
23 understand the fuel goes right into the tanks.  
24 There's no -- it's a natural gas moved through a  
25 catalyst into a liquid fuel.

1                   But anytime you have different things  
2       you're doing to the fuel and you limit it to  
3       California, you're going to have a price  
4       differential even if the numbers say you  
5       shouldn't. People will tell you that car diesel  
6       should only cost 6 cents more a gallon. Well, you  
7       look at the computer programs that are out to  
8       avoid fueling here, you will see that that's not  
9       the case every day when you're going to buy fuel.

10                  So we need, and you need, a stake --  
11       unfortunately there's not enough money to go  
12       around right now. So the more money we lose on  
13       registration fees, which by the way are already  
14       based on gross vehicle weight for any vehicle over  
15       10,000 pounds, when \$1700 goes away and 3 percent  
16       of that comes back based on IRP, we have problems.

17                  We also have, Paul Wuebben's district  
18       has a 260 miles that somebody traveled to come  
19       into L.A., break down in a warehouse, so they can  
20       compete against California's trucking industry.  
21       And that's wrong. It's increasing the emissions  
22       in South Coast. It's detrimental to the state's  
23       financial well being. It's detrimental to the  
24       public and the air quality.

25                  There's no upside other than on a piece

1 of paper we're first. And we're asking you to put  
2 California truckers first. Thank you.

3 MS. BROWN: Any other comments from the  
4 panel?

5 MR. FONG: I think our analysis for  
6 Fischer Tropsch diesel assumes that it's basically  
7 a transparent type of additional component that  
8 might go into conventional diesel.

9 We also believe that in the longer term  
10 the petroleum industry is likely to use  
11 increasingly greater proportions of these gas-to-  
12 liquid type fuels to augment their volume of  
13 usable diesel fuels.

14 In fact, Fischer Tropsch diesel has  
15 already been blended in a small fraction into  
16 California diesel whenever those economics looks  
17 favorable to specific refiners.

18 We believe that the industry would only  
19 resort to using Fischer Tropsch diesel if they  
20 could actually make more money doing it.

21 And so, in our minds, it's not likely to  
22 result in a higher end use cost simply because the  
23 producers want to sell the product, and they can  
24 do so with sufficient economic results at the  
25 current retail price for diesel.

1 MS. WILLIAMS: Well, that would mean  
2 that you support a national fuel standard that  
3 would be up to the market to do that, because if  
4 you force 33 percent blending as a California-only  
5 standard you put most of my members out of  
6 business.

7 MR. FONG: We are not necessarily  
8 arguing that that ought to be established as a  
9 standard. Our analysis looked at that option. If  
10 it were to be deployed in some fashion either by  
11 the industry on a voluntary basis, or through some  
12 other mechanism, it would produce a certain  
13 overall net positive cost/benefit.

14 MS. WILLIAMS: If your report could  
15 reflect that, I mean that would take away our  
16 concerns.

17 MR. CACKETTE: Stephanie, I think it  
18 does. The key assumption here is that California  
19 does have different fuel, and Fischer Tropsch fuel  
20 does cost more than diesel. But it has good  
21 attributes, like no aromatics and high cetane  
22 numbers. So if you blend it in fuel like federal  
23 fuel, take federal fuel plus Fischer Tropsch, you  
24 could end up in a generic sense with a California-  
25 like diesel fuel. And the offset between the cost

1 of regular California diesel fuel and federal  
2 helps offset the higher cost of the Fischer  
3 Tropsch components.

4 So it gives you a way of, it gives the  
5 refiner a way of taking lower cost fuel and sort  
6 of converting it to California fuel. And part of  
7 that --

8 MS. WILLIAMS: Well, the cetane --

9 MR. CACKETTE: -- there's a savings with  
10 that.

11 MS. WILLIAMS: Right now they're  
12 blending with the cetane additive. The cetane  
13 additive is less expensive than Fischer Tropsch  
14 today. So I think the report should reflect what  
15 we know today and --

16 MR. CACKETTE: It also has the aromatics  
17 in it, so that's advantage to try to blend it low  
18 aromatic fuel, as well.

19 MS. WILLIAMS: But, you know, when  
20 you're fueling up and one side of the border it's  
21 one price and on the other side of the border,  
22 guess what, you just don't stop. And we don't  
23 have the choice of going to the other side of the  
24 border.

25 So what we're saying is put those in the

1 report. Reflect -- we're not trendsetters here  
2 with fuel. We know that. The federal government  
3 didn't adopt a California fuel. And nobody is  
4 looking at the California fuels right now. Texas  
5 is backing up, too. The cost is prohibitive and  
6 the flight is huge.

7 In the state highway account the money  
8 that has to go to fix the highways so the  
9 interstate and state trucks can drive safely is  
10 being impacted. And we can't afford this.

11 MR. CACKETTE: But I think -- urge you  
12 to take a look at the -- report, read the section  
13 on Fischer Tropsch carefully. And then maybe you  
14 could comment on whether you think the assumptions  
15 are valid. Because it basically says that it  
16 doesn't cause an increase in the price of the fuel  
17 in California if you use it in this blend at this  
18 ratio.

19 So, --

20 MS. WILLIAMS: At 33 percent, --

21 MR. CACKETTE: Yeah.

22 MS. WILLIAMS: -- at a 25 percent  
23 incremental?

24 MR. CACKETTE: Because it has a blending  
25 value it can offset the higher cost of the Fischer

1 Tropsch element, itself.

2 And, you know, so look at that in your  
3 comments by the 6th, you know, maybe you can tell  
4 us whether you think that makes sense or not.

5 MS. WILLIAMS: Yeah, we'll provide  
6 extensive comments. But the bottomline is you're  
7 going to offset the miles that people drive to  
8 avoid, and if everybody doesn't have to use this  
9 blending or whatever, you end up with 320,000  
10 trucks here and 1.5 million trucks operating here,  
11 not paying their fees.

12 MR. CACKETTE: But if it doesn't change  
13 the price of the fuel here, then nothing --

14 MS. WILLIAMS: Then we'd be supportive  
15 of it.

16 MR. CACKETTE: -- nothing changes from  
17 that standpoint.

18 MS. WILLIAMS: But unfortunately we've  
19 been hearing this for a long time. Car diesel is  
20 only supposed to cost 3 cents, 4 cents, 6 cents.  
21 It's 40 incremental in 1999 to 2000 between  
22 Arizona and L.A.

23 So we hear this but it doesn't work out  
24 in the marketplace that way. We need to be  
25 protected by the state, not further disadvantaged.

1 Thank you.

2 MR. WUEBBEN: Stephanie, I just wanted  
3 to explore one other aspect of this, which is that  
4 we were viewing Fischer Tropsch essentially as a  
5 fuel extender. And I think that we're trying to  
6 find something that is going to address the  
7 increasing volatility in the market, which we  
8 think that you and your membership are quite  
9 concerned about.

10 And I assume that you do recognize that  
11 with the 2.4 percent diesel annual growth and the  
12 demographics that are adding to the diesel demand  
13 growth, that there is, as we look out in the  
14 future, an increase in concern about volatility in  
15 the price environment.

16 MS. WILLIAMS: There's only volatility  
17 in California.

18 MR. WUEBBEN: Right.

19 MS. WILLIAMS: So, --

20 MR. WUEBBEN: And so I guess if we're --

21 MS. WILLIAMS: The answer is don't fuel  
22 in California.

23 MR. WUEBBEN: Well, --

24 MS. WILLIAMS: Be able to not fuel here.

25 Change your business arrangements so that you can



1 have a route that doesn't include fueling here.  
2 People aren't looking at changing the volatility  
3 in California. They're looking at escaping  
4 California, which is why the state has the deficit  
5 it has.

6 We need to figure out a way to make it  
7 more -- if you want to use this kind of fuel in  
8 the state, great. Make it mandatory for people  
9 who come here to have it in their trucks. Make it  
10 mandatory for people who attract freight to use a  
11 company that has that kind of fuel.

12 Don't say you guys have to wear an  
13 elephant on your back, and I hope you can stay  
14 alive, because it doesn't work that way. It's  
15 unfair. You guys don't even use California  
16 carriers at South Coast. Your paper doesn't come  
17 through a California carrier.

18 You want to believe in a fuel standard  
19 and be clean, that's great. But stand up for what  
20 you believe in, use it. Make it a requirement for  
21 the end user not to be the trucker who is not the  
22 person who makes the decision. Make it be the  
23 shipper.

24 But for right now there isn't a mandate  
25 to use this fuel. There's a mandate for the

1 trucks to fuel with it. You have to change the  
2 dynamic and make it required for everybody to use  
3 it, or just give up.

4 MR. WUEBBEN: Well, we weren't trying to  
5 address the entire scope of solving the NAFTA  
6 border issue and all of the competitive economics  
7 that exist in the border and that market  
8 environment. I, you know, respect --

9 MS. WILLIAMS: And Arizona and Oregon  
10 and Salt Lake --

11 MR. WUEBBEN: -- and we appreciate that  
12 there are those factors. But taking the more  
13 narrow concern, perhaps, that there is this  
14 increasing demand growth it would seem very  
15 logical, and I think that's what's driving our  
16 analysis of having a fuel extender has some  
17 benefit if it can be brought in at a reasonable  
18 cost. And maybe 33 percent isn't the blend value.  
19 Maybe it's lower; maybe it's a little higher. But  
20 those economics do look promising, so we --

21 MS. WILLIAMS: Put a cap on the price.  
22 But for right now you have increases far greater  
23 in other states of diesel fuel sold. California's  
24 flat. Agriculture has to buy the fuel here.  
25 Until it gets to the point where the fuel costs so

1 much they can't compete with other states who are  
2 providing agriculture. And it will be trucked in  
3 by our interstate fleets.

4 But for right now it's just a bad  
5 business plan. The states decided --

6 MR. WUEBBEN: Well, actually diesel is  
7 growing faster than gasoline --

8 MS. WILLIAMS: -- we have standards --  
9 diesel is not growing faster than gas, no, that's  
10 not. I would like to see those numbers, though.  
11 Could you provide me those, Susan? The numbers  
12 that were behind the forecast.

13 MS. BROWN: They're in the forecast  
14 document --

15 (Parties speaking simultaneously.)

16 MS. WILLIAMS: Yeah, I would like to see  
17 that because I've got the state -- and what data  
18 is it from, the state?

19 MS. BROWN: The data's from -- well, the  
20 data is compiled by us. The December 2001  
21 forecast, which is, by the way, being updated.  
22 But it shows --

23 MS. WILLIAMS: So 2001 is the last date  
24 you have fuel? Because that's all that I can get.

25 MS. BROWN: Yeah, well, again -- Leigh,

1 are you here in the back of the room? Maybe you  
2 could talk to -- did he leave? Okay. I'll put  
3 you in touch with the people that --

4 MS. WILLIAMS: Right, because we could  
5 only get up to 2001, and it's been flat. There  
6 hasn't been growth. And I notice this growth rate  
7 starts at 2001 in your graph and goes up. And I  
8 don't know what that's based on, because the  
9 actual data and sales are flat.

10 Thank you.

11 MS. BROWN: Thank you. Okay, I'm going  
12 to open it up to the audience since we're out of  
13 blue cards. I know a number of you have spoken to  
14 me privately and would like to speak, so don't be  
15 shy. Yes, sir, come to the microphone, please;  
16 identify yourself for the record.

17 MR. WORRELL: Eric Worrell. That's  
18 E-r-i-c W-o-r-r-e-l-l. I'm an independent  
19 consultant, 20 years in energy industries starting  
20 with natural gas transportation storage and  
21 production; petroleum refining; and independent  
22 power development.

23 One thing -- I guess I'll also mention  
24 my political inclinations go towards somewhere  
25 between liberal and libertarian, and a very strong

1 environmentalist bent. So I tend to vote  
2 environmentalist when I can, when the other things  
3 make sense.

4 One thing you see through most of my  
5 career and if you look around through our society  
6 is you get from people behavior that you reward,  
7 and you don't get behavior that you penalize.

8 Best example in my career I've seen is  
9 if you're in a petroleum refinery and if you can  
10 double the cost of crude oil by resource-based  
11 taxes, and take the tax burden off the salary, off  
12 the payroll tax, off the sales tax on the  
13 materials used to implement steam leak repairs,  
14 oil leak repairs, improved processes and things  
15 like that, you would get a tremendous improvement  
16 in efficiencies in the processes; you get a  
17 tremendous reduction in waste.

18 And that goes anywhere you look in  
19 society. And I look around and I see what's going  
20 on in California now, and I don't see that being  
21 done. Our governor is announcing sales tax  
22 increases which are something that goes onto the  
23 human labor portion of the tax, which is  
24 absolutely the most renewable resource we have  
25 right now. And if you could reduce the cost of

1 human labor, reduce the cost of human brain power  
2 and ingenuity, and tax and assign proper values to  
3 the extraction of resources, the consumption of  
4 resources, the byproducts of resources you'll get  
5 a lot different behavior.

6 I, a couple weeks ago, visited Pacific  
7 Biodiesel in Hawaii. And I'm very disappointed to  
8 see so little mention in today's presentation. I  
9 haven't had time to go through the whole report of  
10 biodiesel. He is able, without any subsidies from  
11 the government, to compete except for the not  
12 having the tax on the fuel. But he can compete  
13 with the current cost of diesel fuel in Maui.

14 You put a 50/50 blend of his fuel, which  
15 is ASTM grade fuel, which unfortunately a lot of  
16 his competitors are not managing to make, but  
17 which he is, put that in a dive boat and the deck  
18 hands can tell when that dive boat switches from  
19 50/50 to straight diesel, because they got to get  
20 out the mops and start swabbing the vomit off the  
21 decks. And that was, you know, -- he -- out of my  
22 memory, I've been on dive boats, I've been on  
23 offshore boats.

24 And what I don't see here is a near-term  
25 emphasis on getting biofuels up.

1                   Power development. We had a crash  
2           program four-month licensing for power plants. We  
3           could do that, something like that to improve the  
4           permitting for ethanol and biodiesel plants.  
5           Which at the ethanol in California conference I  
6           talked to a gentleman from Nebraska who said, I  
7           was really interested in coming into California  
8           until I started hearing these permitting horror  
9           stories.

10                   This is someone I talked to who sounded  
11           like a very sound player in the markets as opposed  
12           to some of the fly-by-night ones that are out  
13           there. He said we could have a tremendous  
14           increase in California's ethanol and biodiesel  
15           production within a year if the emphasis was put  
16           there.

17                   We could have a tremendous change in  
18           California's car fleet if instead of continuing as  
19           we're doing, we reduce our state sales taxes down  
20           to some, you know, get rid of the state sales tax,  
21           replace that with a fuel-based tax on, probably  
22           you'd have to do it to start at the motor fuels  
23           level and work from there into building a more  
24           comprehensive resource based tax level. But that  
25           would be -- tax the motor fuels.

1           Also tax natural gas because we've got a  
2       natural gas crunch that the Energy Commission is  
3       also responsible for dealing with.

4           When you take off for the natural gas  
5       fueled vehicles, that's not such a big deal  
6       because you wouldn't have to put that big a price  
7       on. It would still be competitive with gasoline  
8       after you put a proper tax that reflects all the  
9       emissions, all the externalities of consuming the  
10      petroleum based motor fuels. And basically you do  
11      that, you get a much much better, much cleaner  
12      thing.

13          Again, on the incentives that you get,  
14      like this other gentleman, I have a Honda Accord  
15      that really does like driving at the 80 mile an  
16      hour average speed coming between Pleasant Hill  
17      and Sacramento.

18                 (Laughter.)

19          MR. WORRELL: Except my Honda Accord, at  
20      80 miles an hour, it's a four-speed SULEV that  
21      gets 28 miles to the gallon at 80 miles an hour.  
22      And just burns much cleaner than almost every  
23      other car on the road.

24          I would have bought a Honda Civic that  
25      did a bit better except for it really didn't



1 handle like the Hondas used to when I needed a new  
2 car. And I'm looking at hoping the new Civic  
3 hybrid is going to be something though it doesn't  
4 have the fold-down rear seat I need to carry  
5 stuff.

6 I personally believe that if you gave  
7 the proper incentives, which I would see, it  
8 should be federal level, not state level, but  
9 unfortunately we don't have that choice right now.  
10 But a proper incentive, a vehicle license fee, a  
11 vehicle purchase fee that is a multiple of vehicle  
12 costs times an emissions factor, times a fuel  
13 consumption factor. Porsche could come up with a  
14 car that could do 50 miles to the gallon at 80  
15 miles per hour. And drive very safely.

16 You get some of these oversized SUVs off  
17 the road that are a danger to other people.  
18 Because people would have incentives to pick a car  
19 that makes more sense on the basis of pay for what  
20 you want -- if you want it, you pay for it. And  
21 if you pick something that's better for the rest  
22 of us, you get rewarded.

23 Thank you.

24 MS. BROWN: Thank you. Comments or  
25 questions from the panel? Thank you.

1 DR. GREENWOOD: My name is Greg  
2 Greenwood; Greenwood just the way you would expect  
3 that to be spelled. I work at the Resources  
4 Agency for California.

5 I'd like to applaud the team's economic  
6 analysis. I really find the analysis of groups 1  
7 and 2 quite interesting and very complete. I  
8 would like to be pointed to where I could find  
9 comparable information for group 3 options, the  
10 ones that you refer to as pricing options.

11 I have looked through the, I believe  
12 it's appendix B, and found the net consumer  
13 benefit and the government revenue impacts, but I  
14 can't find anything related to the external cost  
15 of petroleum dependence nor the environmental  
16 benefits.

17 And in the interest of kind a complete  
18 and accurate comparison of the full suite of  
19 options I would like to see -- I'm sure those  
20 numbers exist somewhere -- I would like to see  
21 them in the report. Are they there now? Could  
22 you direct me to where I would find those  
23 economic --

24 MR. FONG: The external costs for those  
25 pricing options and the environmental net

1 benefits, those are found in appendix A. And the  
2 direct net nonenvironmental benefits for the  
3 pricing options are found in appendix C.

4 And you can numerically add those  
5 various components to then generate sort of an  
6 integrated overall result. We choose not to  
7 present that material in volume C or D, primarily  
8 because we were not emphasizing the pricing  
9 options as sort of a strategy.

10 Those are actually potential  
11 implementation options. For instance, if the  
12 automotive industry wanted to produce more fuel  
13 efficient new vehicles, various pricing options  
14 could then be implemented to actually achieve the  
15 sales volumes that might be needed to meet that  
16 fleet average fuel economy level that we  
17 evaluated.

18 So I think that you make some good  
19 remarks, but that information is contained within  
20 the technical appendices.

21 DR. GREENWOOD: That is true, but I need  
22 to dig through them to find them, whereas you do a  
23 very nice job of summarizing them for groups 1 and  
24 2 in those nice charts. I would really encourage  
25 you, in the interest of sort of full disclosure of

1        what the team has done, to at least put a third  
2        graph in your report that shows those numbers  
3        added together for the pricing.

4                I agree, they look like implementation  
5        options. They're, I think, somewhat summarily  
6        dismissed as being politically difficult, unlike  
7        CAFE standards, of course.

8                (Laughter.)

9                MS. BROWN: Thank you, Greg. Other  
10       comments? I'll get you next, Mr. Eaves.

11               MS. BURER: I'm Mary Jane Burer from  
12       NRDC. NRDC would like to support the overall  
13       petroleum reduction goals and recommendations set  
14       forth by staff. We believe they are cost  
15       effective, good for the economy and good for the  
16       environment.

17               We support the recommendation that the  
18       states take action to reduce petroleum consumption  
19       in the near term, and in particular NRDC is  
20       supporting efforts to improve fuel efficient tires  
21       in the replacement market.

22               NRDC is currently supporting legislation  
23       to promote fuel efficient tires; specifically  
24       labeling system, the development of standards and  
25       consumer information on fuel efficient tires.

1           According to a CEC consultant report the  
2           technology exists to make the tires more fuel  
3           efficient. Consumers would also save money at the  
4           gas pump. Fuel efficient tires pay for themselves  
5           in about one year. And thereafter put money back  
6           into the drivers' pockets. According to the CEC  
7           consultant report, a driver would save \$50 to \$150  
8           in reduced gasoline costs for the initial  
9           investment of just \$5 to \$12 for a set of four  
10          tires.

11           If found that California could save  
12          approximately 300 million gallons of gasoline  
13          annually if its passenger fleet were equipped with  
14          low rolling resistance tires. And consumers would  
15          save more than \$470 million annually at current  
16          retail prices, or approximately \$1.4 billion over  
17          the three-year lifetime of a typical set of  
18          replacement tires.

19           Therefore, we'd like to thank you, CEC,  
20          for this wonderful work in the area and for your  
21          appropriate goals and recommendations set forth by  
22          staff. Thank you.

23           MS. BROWN: Thank you very much. I  
24          might note for the audience that the report that  
25          she is referring to was prepared by the Energy

1 Commission under Senate Bill 1170, and it is on  
2 our website. It's a California State tire  
3 efficiency program report with recommendations.  
4 So if those of you want to look into that further.

5 Thank you very much.

6 Mr. Eaves.

7 MR. BEMIS: Susan, before he starts, we  
8 also included that in our report. It's part of  
9 our near-term options are the -- tires.

10 MR. EAVES: Good morning, my name is  
11 Mike Eaves. I'm with the California Natural Gas  
12 Vehicle Coalition.

13 I really commend the team, the Energy  
14 Commission and the Air Resources Board, on an  
15 excellent report and study. This is extremely  
16 comprehensive and I've got to admit that since the  
17 report has been published I have not had time to  
18 cover everything in detail. But I will try to do  
19 a better job by the June 6th deadline.

20 I'd like to make a couple of  
21 observations or questions and comments. Number  
22 one, on page 12 of the presentation, looking at  
23 the efficiency options there's a projection in  
24 there at the top where light duty 10 percent  
25 penetration of diesel into light duty.

1           At the ARB conference in Lake Arrowhead  
2           last week we got a large dose of the European  
3           experience that has up to 70 percent penetration  
4           in some countries of light duty diesels.

5           And I was wondering if any analysis has  
6           been done, if there would be greater diesel  
7           penetration in light duty, what that does to the  
8           refinery mix and what that does to both pricing  
9           for diesel and gasoline.

10          Secondly, --

11          MS. BROWN: Would you like us to respond  
12          to that one first?

13          MR. EAVES: Yes, please.

14          MS. BROWN: Gerry.

15          MR. BEMIS: Could you restate it,  
16          please? I was writing.

17          MR. EAVES: I was interested if you've  
18          looked at some sensitivity analysis on higher  
19          penetrations of diesel into the light duty market.  
20          And what that does to change the diesel to  
21          gasoline refinery mix that's really important in  
22          the pricing scenarios for both diesel and  
23          gasoline.

24          MR. BEMIS: You raise an important point  
25          and that is we really did not do any supply side

1 analysis of fuels. Whether it was biodiesel or  
2 changing between gasoline and diesel which is  
3 really what you're talking about, and how it might  
4 affect that product slate at the refinery.

5 That's a supply side kind of analysis.  
6 And when Dan was saying that we needed to do more  
7 work in some of these areas, they were basically  
8 supply side analyses that we haven't yet done.

9 So we don't really have an answer to  
10 that. But it says 10 percent because, on that one  
11 particular slide because we analyzed light duty  
12 diesels using a methodology that was consistent  
13 for all of the -- for the nonpetroleum fuels. We  
14 happened to do light duty diesel in that same  
15 manner.

16 And for all of those we used a --  
17 because we couldn't forecast what the market  
18 penetration would be, for example for CNG light  
19 duty vehicles, or propane vehicles, or light duty  
20 diesel vehicles, we assumed a 10 percent market  
21 penetration.

22 MR. EAVES: Okay. Thank you.

23 MR. BEMIS: And that's not a forecast;  
24 that's just done for comparative purposes.

25 MR. EAVES: A very sensitive issue for



1 the natural gas vehicle industry and the natural  
2 gas industry is found on page 10 of the  
3 presentation where you discuss the over-reliance  
4 on natural gas.

5 I'd like to point out that in addition  
6 to natural gas being used in the residential,  
7 commercial, industrial, even power generation  
8 markets, that in the scenarios that you've looked  
9 at natural gas would be consumed in several  
10 different venues.

11 One for CNG and LNG vehicles. One for  
12 the Fischer Tropsch additive for diesels. And  
13 number three is for the source and supply of  
14 manufacturing that feedstock going into hydrogen  
15 as envisioned by the Department of Energy well out  
16 past 2020. It's envisioned that natural gas is  
17 going to be the source of hydrogen.

18 So that over-reliance of natural gas is  
19 really in three key areas that the Commission is  
20 looking at. And we don't want to be singled out.  
21 I would hope that policies and everything don't  
22 try to assume that bias that we have to preserve  
23 natural gas because on the opposite of the coin,  
24 not gasoline and diesel, where as one of the first  
25 few slides shows that there's potentially a great

1 import demand for refined products into  
2 California.

3 So, supply and demand is really going to  
4 address natural gas; and it's also going to  
5 address the diesel and gasoline.

6 My third comment, on page 9 it notes  
7 that the cost of the infrastructure for  
8 alternative fuels is high. And being a pioneer of  
9 the natural gas vehicle industry for 15 years,  
10 yeah, that's one of the things that's a major  
11 concern.

12 But you have to recognize that  
13 infrastructure only represents about a quarter or  
14 third of the total costs, and we're talking about  
15 vehicle costs and infrastructure costs of  
16 alternative fuels. And that fuel cell vehicles  
17 are going to have the same type of issues, you  
18 know, regarding the infrastructure costs.

19 And we do recognize there are going to  
20 have to be policies that are going to support that  
21 type of infrastructure development for any of the  
22 options that you've discussed.

23 An additional comment, on page 14 where  
24 you show the net benefits. If you look at the  
25 comparison of fuel cell vehicles at the bottom of

1 the page and CNG light duty vehicles about half  
2 way up the page, I'm going to have to go look at  
3 the data and everything to try to analyze it more  
4 closely, but you really have to realize that the  
5 onboard fuel systems for fuel cell vehicle and a  
6 CNG vehicle are nearly identical with the fuel  
7 cell vehicle storage potentially being more  
8 expensive.

9 I know there's differences in the fuel  
10 efficiency of the vehicles, but my current Honda  
11 GX Civic has a fuel economy of over 31 miles per  
12 gallon on natural gas. And so I don't intuitively  
13 see the difference in why fuel cell vehicles  
14 should be that much higher. I realize there are  
15 emission benefits, environmental benefits, but I  
16 think on the cost side of the infrastructure and  
17 the cost of the vehicles, potentially that that  
18 would say that there's not that much difference  
19 between light duty CNG and the fuel cell.

20 My last comment --

21 MR. BEMIS: Can I respond to that?

22 MR. EAVES: Yes, go ahead.

23 MR. BEMIS: Since I've got -- yeah,  
24 we -- I think it mainly is the efficiency  
25 differences. We have a much higher, on a gasoline

1 gallon equivalent basis we use 53 miles per gallon  
2 for the hydrogen fuel cell and we use --

3 MR. EAVES: That certainly helps --

4 MR. BEMIS: -- and we use 20 for the CNG  
5 vehicle, as an average light duty vehicle.  
6 Compared to an average gasoline car of 21.2.

7 MR. EAVES: Well, I think that that's  
8 one of the things that maybe should be considered  
9 is that as far as the general public goes in  
10 transportation, something like the Honda Civic  
11 dedicated natural gas at 30 miles per gallon is  
12 probably more representative of the consumer  
13 market than a Ford Crown Victoria at 18 miles per  
14 gallon.

15 So, I think that that does change the  
16 numbers. But as you're moving to displace  
17 gasoline you're going to be looking at the  
18 alternate fuel options are going to be tackling  
19 the consumer market, as well as the fleet market.  
20 And I think you have to take that into  
21 consideration.

22 MR. BEMIS: We used an average, quote-  
23 unquote, typical vehicle for gasoline and for the  
24 nonpetroleum vehicles that would potentially  
25 replace that gasoline vehicle. And we used 21.2

1 miles per gallon for the conventional gasoline  
2 vehicle. And we used 20 for the natural gas  
3 vehicle. I think because the expectation was it  
4 would be basically the same vehicle but it would  
5 weigh more. As I recall.

6 MR. EAVES: Yeah, like I say the  
7 analysis is very thorough and rigorous in its  
8 analysis, and that's my intuitive look at fuel  
9 cells versus CNG. And I think that if you start  
10 looking at a potential consumer market for CNG  
11 vehicles and high mileage vehicles, that the  
12 difference between the fuel cell vehicle and the  
13 natural gas vehicle are going to diminish.

14 My last comment that I'd like to make  
15 and really is in regard to the three  
16 recommendations. And it really goes in the order  
17 of the recommendations.

18 The first recommendation in setting the  
19 goals is really goal setting. The recommendation  
20 number two is really an action item, an action  
21 item for the state and the federal government to  
22 work together to negotiate not only amongst  
23 themselves but with automobile manufacturers on  
24 the issues of CAFE credits.

25 So, number three recommendation, setting

1 the goals for alternative fuels, I think that is  
2 very appropriate. But I think there is missing is  
3 a recommendation number four, which is potentially  
4 state action items and everything to potentially  
5 negotiate with vehicle manufacturers for the  
6 availability of some of the types of vehicles that  
7 you would like to see.

8 And also, maybe, potentially negotiation  
9 with fuel providers, oil companies and/or other  
10 fuel providers that are in the market, to try to  
11 negotiate how that infrastructure ends up getting  
12 deployed.

13 As I think you all recognize alternative  
14 fuels is a chicken-and-egg scenario, and  
15 assistance on the infrastructure side goes a long  
16 way to helping the market go. So, in terms of  
17 that, that fourth recommendation may be slanted  
18 more towards fuel providers and looking at  
19 aggressive options to make sure that fuel is  
20 provided when and where you need it.

21 So, anyway, I will look forward to  
22 making further comments in the hearing and  
23 submitting written comments. But, I appreciate  
24 this opportunity. Thanks.

25 MS. BROWN: Thank you very much.

1       Comments or questions? Yes. Come to the  
2       microphone, please. Is your question for Mr.  
3       Eaves?

4               MR. WORRELL: It's for both.

5               MS. BROWN: Okay, would --

6               MR. WORRELL: Gerry and Mr. Eaves.

7               MS. BROWN: -- you hang on there a  
8       minute, Mr. Eaves. And please come to the mike.

9               MR. WORRELL: Eric Worrell. What I'd  
10      like the two of you to kind of discuss a little  
11      bit more is how most of the fuel cell vehicle --  
12      talk towards the issue of regenerative braking,  
13      which is a major -- because fuel cell vehicles are  
14      naturally set up for that, having an electric  
15      motor and not having the weight of the recip motor  
16      in it. So that's a major advantage to the fuel  
17      cell vehicle.

18              Also you didn't talk about -- I didn't  
19      catch anything on CNG as the fuel for fuel cell  
20      vehicles, makes a lot more near-term sense than  
21      the hydrogen does. The infrastructure is already  
22      started to be in place; the safety issues are a  
23      lot lower; lot less difficult safety issues to  
24      solve for CNG.

25              So, would you talk to those two issues?

1           MR. EAVES: Regarding using CNG on board  
2     for fuel cells, fuel cells need hydrogen. And  
3     adding CNG onto the vehicle would require an  
4     onboard reforming operation and cleaning their  
5     resultant hydrogen from the natural gas.

6           Most of the vehicle manufacturers are  
7     obviously looking at onboard reforming operations  
8     for gasoline and other liquid fuels, but those  
9     have technology hurdles and everything that are  
10    beyond the CNG industry to address those. Those  
11    have really become a vehicle issue for the  
12    manufacturer to address.

13          MR. BEMIS: Yeah, I guess I can add to  
14    that we did look at onboard reforming for  
15    gasoline, but we did not for any other fuel  
16    because there was at least some industry interest  
17    in that option. And so we included that.

18          Responding to your other question about  
19    regenerative braking. We assumed a fuel cell  
20    only; we didn't look at a hybrid fuel cell battery  
21    combination where you could possibly use the  
22    battery for some regen braking. So there wasn't  
23    any regen in ours.

24          I have heard very recently of some  
25    potential use of a reversing kind of fuel cell,



1 but I don't know anything about it. And that, you  
2 know, potentially could be used to basically  
3 generate the hydrogen while you're braking or  
4 something, I don't know.

5 But it sounds like it's kind of not  
6 feasible without some battery on board to absorb  
7 the energy from the braking.

8 MS. BROWN: Okay, let us first go to Mr.  
9 Wuebben who has a question for Mr. Eaves.

10 MR. WUEBBEN: Yeah, Mike, I appreciate  
11 all your comments, and I don't want to put you on  
12 the spot, but perhaps either now or on the June  
13 6th meeting I wonder if you have any thoughts on  
14 what suggestions you might bring to us related to  
15 LNG, both perhaps in the small scale arena, which  
16 I know you've had some experience, and in the  
17 larger scale, because it would seem that there may  
18 be some synergies that might exist that would  
19 possibly enhance what we're trying to do here.  
20 But I wanted to get your perspectives on the  
21 possible strategic role of LNG.

22 MR. EAVES: Well, I think that the  
23 strategic role of LNG is probably pretty high in  
24 this scenario. LNG is a liquid fuel for heavy  
25 duty trucks and heavy duty vehicles, obviously to

1       save space and weight on the vehicle. And the  
2       cost of the fueling system, et cetera.

3               But LNG is also an excellent source of  
4       CNG for CNG vehicles. In fact, at a California/  
5       NGV partnership meeting yesterday at South Coast  
6       one of the transit operations, OmniTrans, a report  
7       a gentleman presented information from that study  
8       that said that they were delighted, they were a  
9       transit property that were CNG that converted over  
10      to LNG. And they had gone from \$300,000  
11      maintenance cost to \$30,000 a year maintenance  
12      costs. That the operating costs, you know, was  
13      significant, savings were significant using LNG as  
14      a source for CNG.

15             And frankly, I believe that if we were  
16      in a -- if we were doing, you know, starting today  
17      developing a natural gas vehicle market, we would  
18      be from a cost competitive standpoint would be  
19      looking more towards LNG as a source of CNG.

20             So I think you don't have to look at it  
21      as potentially an LNG market over here and a CNG  
22      market over here. It could be an LNG market  
23      supplying two different segments. And obviously  
24      there's a lot of economies of scale if you do  
25      that.

1           But I think that LNG has got a pretty  
2   bright future supplying both of those markets in  
3   California. Therefore, any type of state policies  
4   that could encourage LNG production within the  
5   state would be very beneficial.

6           MS. BROWN: Dr. Frank, you had a  
7   question for Mr. Eaves or for staff? You have to  
8   come to the microphone.

9           DR. FRANK: That was a good report on  
10   CNG and LNG, but I'm surprised a little bit about  
11   Gerry Bemis' comment that the hydrogen fuel cell  
12   was rated at 53 miles per gallon when the CNG  
13   vehicle was given the 20 mile per gallon rate. It  
14   all, somehow know that the thermodynamics doesn't  
15   seem to work right.

16           Because in creating hydrogen from CNG  
17   you've taken the carbon and CO2 and the energy  
18   from carbon and thrown it away. With CNG, if it's  
19   burning correctly, it should get -- you're burning  
20   both the carbon and you're getting all the energy  
21   from the hydrogen and carbon in the CNG.

22           So, when you strip away half the  
23   molecules and the energy content of CNG how can  
24   you end up with higher fuel economy?

25           MR. BEMIS: I was speaking from tank to

1 wheels, basically.

2 DR. FRANK: Oh, yeah, well --

3 MR. BEMIS: It wasn't fuel -- the  
4 upstream stuff was done in task one. I was  
5 focusing on the data that we use for task three.

6 DR. FRANK: Well, then I think that may  
7 be a flaw in the report because that, of course,  
8 gives you a very much higher rating for hydrogen  
9 than if you spoke from CNG or from the tank to the  
10 wheels.

11 Anyway, but that was a first comment.  
12 The second comment about fuel cells and  
13 regenerative braking, yes, there is research being  
14 done on different kind of fuel cell. It's a  
15 hydrogen fuel cell. But using metal hydride  
16 batteries as a base, metal hydride.

17 And fundamentally that is the only kind  
18 of fuel cell that could become regenerative. But  
19 that is a long long distance in terms of research.  
20 So just a couple comments.

21 MR. BEMIS: Right, and just to sort of  
22 complete the thought on the other issue, basically  
23 we assume that those effects are incorporated in  
24 the retail prices of the fuels. And therefore it  
25 is appropriate for us to look at tank to wheels.

1 DR. FRANK: Okay, so in other words,  
2 what you're saying is all of your computations are  
3 tank to wheel, and not well to wheel.

4 MR. BEMIS: The economics are based upon  
5 tank to wheels.

6 DR. FRANK: Okay, the economics are  
7 based on tank --

8 MR. BEMIS: The economics for task  
9 three.

10 DR. FRANK: I see.

11 MR. BEMIS: Then there were  
12 externalities. Because we were looking at it from  
13 a consumers' perspective and then from a  
14 government perspective, okay. The consumer  
15 doesn't buy raw materials and make hydrogen and  
16 strip out the C from the H. Industry does that.

17 DR. FRANK: Yeah.

18 MR. BEMIS: The consumer buys the fuel,  
19 okay. And so we wanted to know what is the  
20 incremental cost of using technology A compared to  
21 the cost of a conventional vehicle.

22 And then we added what happens to the  
23 government. Because we took into account the  
24 effect of the existing tax structure in terms of  
25 impacting government revenue. And we called that

1 the direct net benefit.

2 DR. FRANK: Okay, that assumes --

3 MR. BEMIS: And then we'd look at the  
4 non, look at the environmental impacts, the  
5 externalities were done in task three.

6 DR. FRANK: Right. That assumes, of  
7 course, that we have an infrastructure for  
8 delivering hydrogen and a storage technique for  
9 onboard hydrogen storage.

10 The alternative is what General Motors  
11 is doing, which is reforming onboard.

12 MR. BEMIS: Yeah, we looked at hydrogen  
13 where you do the reforming offboard. And we  
14 looked at gasoline where you do the reforming  
15 onboard. Both of those types of fuel cells are  
16 included.

17 DR. FRANK: I remember reading that.  
18 Okay, thank you.

19 MS. BROWN: Thank you, both. Mr. Eaves,  
20 anything further?

21 MR. EAVES: No, thank you.

22 MS. BROWN: Okay. Thank you. I see a  
23 number of other parties in the audience I know are  
24 wanting to make comments. Elisa Lynch, would you  
25 come forward.

1 MS. LYNCH: Thank you. My name's Elisa  
2 Lynch and I'm the Global Warming Campaign Director  
3 for BlueWater Network.

4 And we're here today, as everyone knows,  
5 to look at ways to reduce petroleum dependence.  
6 And when we step back a moment and look at why the  
7 Legislature asked your agencies to do this,  
8 there's basically three reasons that petroleum  
9 dependence is a problem for the state.

10 Number one, it's an energy security  
11 problem. Oil comes from politically unstable and  
12 economically unstable regions. A lot of it comes  
13 from out of the country. The supply is inherently  
14 limited because it's not renewable.

15 The second reason that petroleum is a  
16 problem for the state is price volatility. And  
17 that was specifically addressed in your report as  
18 one of the reasons that we're doing this.

19 A third reason is pollution. And the  
20 state is already mandated under other legislation  
21 to look at ways to improve air quality. And since  
22 AB-2076 was passed, the state is also looking at  
23 greenhouse gases, specifically the Air Resources  
24 Board is looking at ways to reduce greenhouse gas  
25 emissions from passenger vehicles.

1           So I think it's important when we look  
2   at objectives for reducing petroleum to harmonize  
3   with these other objectives for reducing  
4   pollution.

5           There are basically two ways to address  
6   petroleum demand. One is to use less petroleum,  
7   and another is to use alternatives. And I'm just  
8   going to address some brief comments today to the  
9   second category which is alternative fuels.

10          The only alternative fuel that you  
11   specifically highlight in your recommendations was  
12   Fischer Tropsch diesel. And Fischer Tropsch  
13   diesel does meet the letter of the law. It's not  
14   a petroleum fuel.

15          However, a concern that it doesn't  
16   achieve the overall benefits, the intended  
17   benefits of petroleum reduction. The first being  
18   energy security. Fischer Tropsch diesel comes  
19   from natural gas which comes from the same regions  
20   that we get oil from. So it has the same  
21   vulnerability in terms of energy security and  
22   supply.

23          In terms of price it doesn't reduce  
24   price for consumers. It looks like it increases  
25   price. And, again, it's subject to some of the



1 same volatility issues that are related to  
2 petroleum fuels because of where it comes from.

3 And the third issue in terms of  
4 pollution it looks like it's about the same as  
5 petroleum-based diesel on criteria air pollutants.  
6 But in terms of greenhouse gases it has a very  
7 negative benefit. According to the numbers in  
8 your report switching to a 33 percent Fischer  
9 Tropsch diesel blend would increase greenhouse gas  
10 emissions by 23 million tons by the year 2030.  
11 This is a real concern for us, given the mandate  
12 that the Air Resources Board has to reduce  
13 greenhouse gas emissions from the passenger  
14 vehicle sector.

15 I know that with Fischer Tropsch diesel  
16 we're looking at the heavy duty vehicle sector.  
17 But it doesn't make sense to be putting a lot of  
18 resources on the one hand into reducing greenhouse  
19 gas, and this is from one part of the  
20 transportation sector, while recommending a fuel  
21 that's going to increase greenhouse gas emissions  
22 in the other part of the sector.

23 So I would definitely encourage you to  
24 reexamine your recommendation for use of --  
25 increased use of Fischer Tropsch diesel.

1           There were other fuels that you did  
2   consider, however, that I believe do achieve  
3   overall benefits for the states. One that stands  
4   out is biodiesel. A 20 percent blend of biodiesel  
5   would instead of increasing greenhouse gas  
6   emissions, according to the numbers in your  
7   report, would reduce greenhouse gas emissions 127  
8   million tons by 2030.

9           This is very significant. It's similar  
10   to the greenhouse gas reductions that your report  
11   shows for government fleets, efficient tires and  
12   there's a third thing which I didn't write down.  
13   But it's definitely going in the right direction  
14   in terms of greenhouse gases. It's a renewable  
15   fuel so it's inherently not something that we're  
16   going to run out of. It's not a foreign fuel. It  
17   avoids the political and economic risks of relying  
18   on fossil fuels like natural gas, as we would with  
19   Fischer Tropsch diesel.

20           It costs the same or less as Fischer  
21   Tropsch diesel according to the numbers from what  
22   I can tell. And it preserves air quality  
23   benefits.

24           For the light duty vehicle side I would  
25   also encourage you to look more closely at

1 renewable fuels. And I was glad to hear today  
2 that you believe that there is more work to be  
3 done looking at ethanol.

4 I think if you look closely at ethanol,  
5 particularly with a low blend, you'll find it also  
6 meets these same criteria for achieving real  
7 economic, environmental and energy security  
8 benefits for the state.

9 So, basically that's all I'm going to  
10 address today. We're going to submit some written  
11 comments, but I would really encourage you, as I  
12 said, to take a closer look at your recommendation  
13 for Fischer Tropsch diesel.

14 Thank you.

15 MS. BROWN: Go ahead, Gerry.

16 MR. BEMIS: Yeah, I guess I want to  
17 respond to at least part of what you said. I  
18 appreciate your comments.

19 Our analysis indicates that biodiesel  
20 costs quite a bit more than diesel or FT diesel.  
21 And your comments regarding FT diesel were focused  
22 solely on the greenhouse gas emissions portions of  
23 it, where our analysis looked at greenhouse gases  
24 plus other effects, and it was more comprehensive.

25 MS. LYNCH: Also energy security is

1 another big piece of looking at Fischer Tropsch  
2 diesel versus a renewable fuel.

3 MR. BEMIS: Um-hum.

4 MS. LYNCH: And I'll look again at the  
5 numbers. From what I looked at in the options  
6 report it looked like the biodiesel was 2 to 8  
7 cents per gallon or something increase in cost  
8 which looked similar to the cost for Fischer  
9 Tropsch diesel. But I'll look at it again, I may  
10 have been mistaken.

11 MR. WUEBBEN: I've got a quick question  
12 regarding your concerns about natural gas. I  
13 wondered, just to clarify, is it your assertion  
14 that Middle Eastern OPEC countries essentially  
15 have the same relative amount of reserves as a  
16 fraction of the total for natural gas as they do  
17 for oil?

18 MS. LYNCH: I was quoting directly -- I  
19 didn't quote directly, but I was going on a  
20 statement that was actually in the options report  
21 about Fischer Tropsch diesel, saying that it comes  
22 from the regions with the same economic and  
23 political instability as petroleum.

24 MR. WUEBBEN: That was a general  
25 comment, but --

1 MS. LYNCH: A general comment.

2 MR. WUEBBEN: But it seemed that you  
3 were taking that a step further and isolating or  
4 assuming that there is literally no difference in  
5 security implications for those fuels.

6 MS. LYNCH: There may be a difference.  
7 However, I think there are much greater benefits  
8 to go into a renewable fuel when you look at it  
9 from that perspective of energy security.

10 MS. BROWN: Thank you.

11 MR. FONG: Susan, our analysis for the  
12 external costs of petroleum dependence does  
13 include an element for energy security.

14 MS. BROWN: Dan, do you recall how  
15 Fischer Tropsch diesel and biodiesel compare on  
16 that oil externality in cost, because I think that  
17 gets to the issue that Ms. Lynch is raising.

18 MR. BEMIS: It's on page 15 of the  
19 presentation today.

20 MR. FONG: Unfortunately the scale of  
21 this graph is probably not adequate to look at the  
22 details for those smaller type options. In our  
23 analysis, though, because of the higher costs for  
24 what we call the B100, that's the pure form of the  
25 biodiesel, when blended in with diesel to make

1 B20, there is a much higher cost to the consumer.  
2 It therefore forces the sum of those three cost  
3 elements into the negative region for direct net  
4 benefits.

5 There is a component there that's  
6 relatively large that is for the external costs of  
7 petroleum dependency. That includes an energy  
8 security consideration.

9 MR. BEMIS: I know that it's greater for  
10 FT diesel than it is for biodiesel.

11 MS. TUTT: That's only because it's 33  
12 percent biodiesel and 2 percent -- or 2 percent  
13 biodiesel and 33 percent Fischer Tropsch. If you  
14 looked at 33 percent biodiesel and 33 percent  
15 Fischer Tropsch you'd have the same external cost  
16 savings.

17 MR. BEMIS: Maybe so.

18 MS. BROWN: Good point. Anything  
19 further on that issue? Okay, I see a number of  
20 other parties. Would you like to come forward and  
21 make a statement? Or I could start calling on  
22 names.

23 (Laughter.)

24 MS. BROWN: Ms. Jones; Mr. McCabe, the  
25 usual suspects are present and accounted for.

1 (Laughter.)

2 MR. McCANN: Richard McCann, that's  
3 M-c-C-a-n-n, from M3 (Cubed) representing Diesel  
4 Technology Forum.

5 I read the report with a fair amount of  
6 interest. We've been involved actually I think  
7 probably for a couple of years. This thing keeps  
8 on coming around, rolling around.

9 I'm going to limit it to a question. We  
10 have a lot more extensive comments, but before we  
11 can make our comments we need to get some  
12 questions answered.

13 And the first one is for light duty  
14 diesel, which group is it in? Because in the  
15 report it's in both group -- in some places in  
16 group one, and in other places in group two.

17 Then Gerry's comment about how the  
18 market forecast was developed for light duty  
19 diesel seemed to tell me it's in group two. So  
20 I'm a little confused as to what group it's in.

21 MR. BEMIS: The answer to the question  
22 is it's in group one. The analysis that was done  
23 for it was consistent with the group two options.  
24 But it's in group one.

25 MR. McCANN: Okay, and there are places

1 in the report where it's in --

2 MR. BEMIS: And it's not a forecast;  
3 it's not a forecast.

4 MR. McCANN: Right.

5 MR. BEMIS: I want to make that clear to  
6 everybody in this room that those, all of the  
7 technologies that were evaluated with what I call  
8 the group two spreadsheet, including light duty  
9 diesel, were based upon a 10 percent market  
10 penetration so that we could compare the  
11 technologies. And they're not a forecast.

12 MR. McCANN: Right. And that would  
13 argue for including light duty diesel in group  
14 two. But if you're turning to -- if it is in  
15 group one, the next question is --

16 MR. CACKETTE: Let me answer, it's in  
17 group one for a reason. The reason is we  
18 considered it as a technology that could be used  
19 to meet the CAFE recommendation. And not as a  
20 technology that should be encouraged or advocated  
21 in a separate manner.

22 So it's clearly, the analysis shows that  
23 it can meet emission standards, it has improved  
24 efficiency, it has CO2 benefits, et cetera. All  
25 those things fit in well with other technologies



1       that, for example, you don't find non-plug hybrid  
2       electric vehicles analyzed separately, either.  
3       That's another technology that's viewed as part of  
4       a menu that would be used to meet an improved  
5       vehicle efficiency standard.

6               MR. McCANN:  And turning to the hybrids,  
7       that actually raises the next question which is  
8       there is a market forecast for hybrid penetration  
9       rate in this document.  But there isn't one for  
10      light duty diesel.  But they're both assumed to be  
11      used to achieve CAFE standards.

12             There's actually even a broader market  
13      forecast for the whole range of technologies that  
14      are going to be used to meet CAFE standards or any  
15      changes in CAFE standards in this model, because  
16      you actually changed the mix of mid-sized cars,  
17      full-sized cars, all of that, in each of the  
18      subsequent years.  So you are making forecasts  
19      about how the market penetration rate will change  
20      for gasoline-fueled cars in the future.

21             But you don't do the same thing for  
22      light duty diesel.  When, in fact, you have the  
23      tool to do that for light duty diesel.  You have  
24      the CALCARS model, which --

25             MR. CACKETTE:  But I think the --

1 MR. McCANN: -- which is available to do  
2 that.

3 MR. CACKETTE: -- I think the  
4 fundamental --

5 MR. FONG: I'd like to respond to that  
6 point, Tom. Let me provide some more detail here.

7 In order to really treat the light duty  
8 diesel case in a manner that was similar to our  
9 other fuel economy cases, we needed to know more  
10 accurately the characteristics and economics tied  
11 to a potential light duty diesel deployment across  
12 13 different vehicle classes.

13 We felt that we did not have  
14 sufficiently usable information to do that in a  
15 legitimate manner. We based many of our fuel  
16 economy cases on some detailed work performed by  
17 the National Research Council, and the American  
18 Council for an Energy Efficient Economy.

19 Those analyses did, in fact, have the  
20 sufficiently detailed information across these  
21 vehicle classes to then allow us to do a  
22 legitimate analysis on a deployment for those  
23 technologies across these different vehicle  
24 classes.

25 Yes, we recognize that there's a lot of

1 advancement occurring for light duty diesel  
2 engines, primarily in the heavier vehicle classes.  
3 But we don't have, we felt, enough information to  
4 apply that kind of limited knowledge across the  
5 full slate of vehicles that we were trying to  
6 model.

7 And so instead we combined the light  
8 duty diesel analysis in with the fuel substitution  
9 analysis and limited the market penetration for,  
10 again, comparison purposes only to a 10 percent  
11 limit.

12 We recognize that if the manufacturing  
13 industry is successful in developing light duty  
14 engines that meet California's air quality  
15 constraints they have then passed a significant  
16 threshold and could then find their way into many  
17 more vehicle classes.

18 And we believe in the next few years  
19 we'll have perhaps more information about the  
20 performance and cost relationships for those types  
21 of options. And then we could do a much more  
22 detailed economic comparison against the  
23 conventional gasoline choice that consumers will  
24 have. So it will be a fair comparison then.

25 So, yes, we understand that, you know,

1 the current analysis might be somewhat limited,  
2 but we believe it's still representative of how a  
3 light duty diesel vehicle would compare to a  
4 conventional gasoline vehicle.

5 MR. McCANN: Actually, though, given the  
6 fact that in Europe there's an entire fleet range  
7 of vehicles offered, and that the market  
8 penetration on the continent is 40 percent for  
9 light duty diesel vehicles, --

10 MR. FONG: Again, we're using --

11 MR. McCANN: -- appear to have that cost  
12 information readily available.

13 MR. FONG: Again, we're using economic  
14 conditions that we believe will be prevalent here  
15 in California, not in the different European  
16 nations, which unfortunately are, in one sense  
17 they've skewed the playing field in Europe to  
18 emphasize the purchase --

19 MR. McCANN: No, my comment isn't about  
20 the demand for light duty diesel vehicles. My  
21 comment is the fact that there is an entire range  
22 of vehicle types offered in Europe, regardless of  
23 whether it's 40 percent penetration or not, or  
24 whatever the demand is in Europe.

25 There is an entire range from compact

1 cars, subcompact cars all the way up to very large  
2 vehicles. And there is cost data available for  
3 that entire fleet of cars. So that it's  
4 disingenuous to say that there's not cost  
5 information available on light duty diesel  
6 vehicles. It is available.

7 MR. FONG: That's not what I said. I  
8 said there was not sufficient information that we  
9 felt confident enough to apply to the vehicles  
10 that we were going to model for California.

11 MR. McCANN: But the ones that you  
12 modeled for California is the entire spectrum of  
13 the fleet. And the cost data is available from  
14 Europe for the entire spectrum of the fleet.

15 MR. FONG: With the exception of  
16 emission control technology that would then meet  
17 California emission standards.

18 MR. McCANN: And you're speculating  
19 about emission control costs for other  
20 technologies, as well. All of your projections  
21 about meeting the higher emission control costs  
22 for gasoline vehicles is also speculative. It's  
23 as equally speculative.

24 So that the fact is that you can put the  
25 light duty diesel vehicle into the same model and

1 run the same forecast as you do for gasoline  
2 fueled vehicles with the same, approximately the  
3 same range of uncertainty.

4 MR. BEMIS: Let me try to contribute.  
5 Subsequent to our original work with the  
6 spreadsheets we did, in fact, run the diesel  
7 option through CALCARS. And using the best guess  
8 we could make of the incremental cost of diesel  
9 vehicles for the 13 vehicle classes, as Dan  
10 mentioned.

11 And we got a number that's quite  
12 consistent with 10 percent. I don't remember  
13 exactly what the number was, it might have been 9  
14 percent. But it was somewhere close to 10  
15 percent.

16 So we did that --

17 MR. McCANN: Okay, well, we'd like to  
18 see that.

19 MR. BEMIS: We did that as a, what do  
20 you call it, sort of as a check, as a check, --

21 MR. McCANN: Okay.

22 MR. BEMIS: -- sensitivity checkpoint.  
23 And Chris is in the back of the room. You can  
24 talk to him about that.

25 MR. McCANN: Okay, well, you know, if

1       that's the answer that you got, that's the answer  
2       you got. And we can live with that answer. It's  
3       just that we believe that if you're going to treat  
4       light duty diesel in this way with other fuel  
5       efficiency technologies, you need to treat it in  
6       the same manner, in the same way.

7               So that that's all we're saying. And if  
8       that's the forecast that you have, that would be  
9       good to include in the report.

10              So, the other question I had about was  
11       about treatment of the fuel efficiency, I'll call  
12       them quote/unquote "options" for fuel economy,  
13       when in fact, they're scenarios.

14              The difference between the ACEEE reports  
15       and the NRC options are, in fact, have nothing to  
16       do with options. No one gets to choose the ACEEE  
17       future over the NRC future. Those are about  
18       exogenous factors which will affect the  
19       effectiveness of the technologies and the cost of  
20       the technologies.

21              So that what, in fact, what you've done  
22       with the fuel economy scenarios is that you have  
23       shown eight different forecasts. Whereas for all  
24       of your other technologies what you have done is  
25       narrowed down those forecasts to one forecast.

1           And so that in fact in the presentation  
2           in this report you should basically show the range  
3           of those eight forecasts. Or you can separate out  
4           the hybrids separately from the other ones and  
5           show the range for the two different sets.

6           But presenting all eight of them as  
7           though they are options, and you used the word  
8           options as though the policy makers can pick  
9           between the ACEEE and the NRC futures, they can't.

10          MR. BEMIS: I don't think that's --

11          MR. McCANN: They cannot pick between  
12          those futures.

13          MR. BEMIS: I don't think your  
14          characterization is quite correct. We called fuel  
15          efficiency an option. And then within --

16          MR. McCANN: No, but you --

17          MR. BEMIS: And then within fuel  
18          efficiency we said here are. Because fuel  
19          efficiency was such an attractive option we said  
20          here are maybe eight different ways that could  
21          unfold.

22          And those are not forecasts. Those are  
23          just different views of how the future could look.  
24          We're saying basically --

25          //



1           MR. McCANN: You used the word -- no,  
2       you used the word options, fuel efficiency  
3       options. And you lay these out all in the same  
4       manner as all of the other options like fuel  
5       efficient tires, that sort of thing.

6           You've treated the ACEEE forecast as  
7       though it has the same weight choosing between the  
8       ACEEE and the NRC. For policymakers who don't  
9       understand these subtleties when they're looking  
10      at these charts, if a legislator looks at this,  
11      he'll say, oh, I'm going to pick the ACEEE future.  
12      That's the one I want.

13          And they will not understand your  
14      distinction in this presentation that the ACEEE  
15      and the NRC scenarios or options are not ones that  
16      they can choose between. And I think that you  
17      need to make that distinction. There is not a  
18      distinction in this graph, and it does not come  
19      across when looking at it.

20          MR. BEMIS: I see what you're saying.

21          MR. McCANN: So I just want to emphasize  
22      that point, that you need to work on that.

23          The next question I have is about the  
24      treatment of fuel savings and fuels displacement  
25      for the various diesel options. Because going

1 from the task three to the task one to the task  
2 four reports, and looking at the difference  
3 between how you treat medium, heavy duty -- or  
4 heavy duty vehicles, light duty vehicles, and  
5 diesel alternative fuels, biodiesel, Fischer  
6 Tropsch, the conversion factors that end up in the  
7 task four report are all different.

8 For example, with the heavy duty diesel  
9 vehicles it looks like it's about an 85 percent  
10 displacement rate. And for light duty diesel  
11 vehicles it's a 55 percent displacement rate. And  
12 then for Fischer Tropsch and biodiesel it's 110  
13 percent displacement rate.

14 And that the task three and task one  
15 analyses are done with one set of numbers to do  
16 the gasoline equivalent calculation. And then the  
17 task four report has a different set of numbers  
18 than what are in task one and task three.

19 MR. BEMIS: I don't think that's true.  
20 We used the same data, the same conversion factors  
21 with regard to lower heating value content and  
22 stuff like that, consistently throughout the work.

23 MR. McCANN: Well, I can go through  
24 these numbers with you, but for example, on medium  
25 heavy duty -- I'll turn to heavy heavy duty

1 vehicle efficiency, you show a savings of 509  
2 million gasoline equivalent gallons per year  
3 savings in the task three report.

4 In the task four report you show 430  
5 million gasoline equivalent reduction in the year  
6 2030.

7 Light duty diesel vehicles you show a  
8 net savings of 722 gasoline equivalent reduction  
9 numbers in task three. And task one implies the  
10 same number. Then when you turn to task four you  
11 show a 400 million gallon reduction.

12 For Fischer Tropsch you show a 1606  
13 million gallon reduction in task one. It wasn't  
14 clear, I couldn't figure it out in task one what  
15 you calculate there. But then when you turn to  
16 task four it's 1800 million gallons.

17 MS. BROWN: Mr. McCann, I'm going to  
18 suggest that probably a productive thing would be  
19 to have you sit down with staff in a separate  
20 meeting, maybe go through the specific numbers.  
21 Because I think you know, we're kind of losing  
22 sight of the main issues here.

23 MR. McCANN: Well, actually, I mean a  
24 workshop is about --

25 MS. BROWN: I mean they are important,

1 and this --

2 MR. McCANN: -- details of how the  
3 calculations are done. And this is, I'm trying to  
4 get down into the core of --

5 MS. BROWN: I understand.

6 MR. McCANN: -- this analysis. And I  
7 view a workshop as a technical opportunity to work  
8 on those things. And sometimes it's done in  
9 public, that you go through this thing. And maybe  
10 there are people here who aren't used to doing  
11 technical analyses or aren't interested in that,  
12 but the most productive public workshops really  
13 get down and dirty into the details.

14 And so I only have one more question  
15 anyway, so --

16 MS. BROWN: Okay, go ahead.

17 MR. McCANN: -- I mean that's really --  
18 and it is, I think that you're right, probably  
19 need to go through this at the staff level. But I  
20 really want to highlight this as an important  
21 issue.

22 And then finally the one thing that --  
23 and we had talked about this with the staff in the  
24 past, there's no presentation in here of the  
25 relative benefits per gallon of reduced petroleum

1 use. That was one thing that I think we talked  
2 about last fall that was actually going to be  
3 presented in this report, and it's not presented  
4 anywhere in this report.

5 I just took the data that you had and  
6 did something where I was able to rank the  
7 relative benefits given the ranges that I could  
8 get out of the task one and task three reports for  
9 each one of the fuels. And you can show the  
10 technologies on the left-hand side, and then show  
11 the rankings. And what you're looking for is the  
12 low hanging fruit which is out here. And you  
13 don't want to deal with the alternatives that are  
14 down here.

15 And this is basically the -- one of the  
16 things about the report is that it tends to  
17 obscure some of the most cost effective options  
18 because they get overwhelmed by ones that produce  
19 a large amount of savings, but at a very low  
20 amount of benefits.

21 And you can't see that on the graph, the  
22 way that they're presented here. I think that  
23 having some sort of ranking like this, you could  
24 even end up creating something, if you do that,  
25 something like a supply curve that shows how much

1       you might be able to save at different levels.

2               And I think that that's another step  
3       that would be useful. With that, I'll conclude.  
4       Thanks.

5               MS. BROWN: Any further comment or  
6       question? Ms. Phillips, did you want to come  
7       forward?

8               MS. PHILLIPS: Thank you. Kathryn  
9       Phillips with CEERT. CEERT is the Center for  
10      Energy Efficiency and Renewable Technologies.  
11      We're a coalition of environmental organizations  
12      and renewable technology companies and other  
13      entities that are interested in reducing the  
14      dependence and the effects of fossil fuels on our  
15      environment.

16              First, I want to thank staff for the  
17      hard work that's gone into this. I've tracked  
18      this for two years. I didn't realize it had been  
19      a full two and a half years that you've been  
20      tracking it. I remember when Paul Wuebben had  
21      dark hair and no grey.

22              (Laughter.)

23              MS. PHILLIPS: And that was just before  
24      this report started.

25              I know you've put in a lot of effort. I

1 know you've held a number of workshops. I know  
2 that you've been available certainly when we've  
3 asked, my environmental colleagues and I have  
4 asked to have meetings, we've been able to have  
5 staff meetings. I know that the diesel proponents  
6 and WSPA have also had a number of meetings with  
7 you.

8 I frankly can't say that I've ever  
9 witnessed, and I have witnessed a lot of public  
10 processes, that has been quite as open and where  
11 you've been quite as available to the public as  
12 you have been through this one. And I thank you  
13 for that.

14 It's also been a lengthy process, as we  
15 mentioned, and this report should have been done,  
16 according to the deadline set by the legislation,  
17 awhile ago. And I know you got extensions. I'm  
18 anxious, as I'm sure you are, to see this come to  
19 a close so that we can start implementing some of  
20 the recommendations.

21 I'll start with some of the specifics on  
22 what we like about the report and we like very  
23 much the goal you've set. It's reasonable. It's  
24 do-able. And most important, it's necessary.  
25 It's necessary for our environment; it's necessary

1 for our energy security; and it's necessary for  
2 our economic stability. And you've mentioned all  
3 of those reasons in your staff report.

4 The options for the sort of three-tiered  
5 options for meeting that goal are also valuable  
6 and well thought through and achievable.

7 We have some concerns about the  
8 potential greenhouse gas impacts of Fischer  
9 Tropsch, and you heard comments about that  
10 earlier. But otherwise we think it's again  
11 reasonable and do-able and necessary, the options  
12 you've offered.

13 The recommended national fuel economy  
14 standard of doubling it to approximately 40 miles  
15 per gallon, we actually think that might be a  
16 little conservative. We saw that ARB's analysis  
17 of the scenario could get us up to 45 miles per  
18 gallon. But we'll live with 40 miles per gallon.  
19 And we hope that the governor accepts your  
20 recommendations to push for that sort of approach  
21 nationally in congress.

22 You asked or Dan asked earlier in your  
23 presentation that you wanted to solicit some  
24 comments on the all-fuel goal, and extending that  
25 goal to 2030, for 18 percent to 2030. And this



1 will come as a shock to you, but I think that  
2 would be a great idea.

3 Finally, I want to note a couple of  
4 things that we think could be improved in the  
5 staff report, and probably the report overall. I  
6 noticed in the introductory section of the staff  
7 report where you ask why does California need to  
8 reduce its dependence on petroleum, you accurately  
9 and well point out the economic and the sources of  
10 supply and the environmental issues.

11 But I also think that it would be wise  
12 to raise some of the concerns that at least some  
13 sectors of both the oil industry and petroleum  
14 economists raise, and that is whether or not we'll  
15 have a supply, or an extractable supply in the  
16 future after 2025, if there will be a peak.

17 And I know there was a recent workshop  
18 that I attended that indicated there was a  
19 difference of opinion on when the supply peaks,  
20 and whether or not, once it peaks, whether there  
21 will be -- how you will extract future oil.  
22 Extraction, to keep the level at what it is now,  
23 would require improving technologies, which we'll  
24 probably be able to improve technologies, but the  
25 question then becomes what environmental price do

1       you pay. And also, what will the cost of that  
2       fuel be in the future.

3               I think it would be wise then to add, as  
4       one of your reasons to bring to policymakers'  
5       attention, one of the reasons for reducing  
6       dependence is this whole controversy about supply;  
7       whether or not there is going to be a supply  
8       shortage.

9               Finally, I always enjoy listening to  
10       Richard McCann, and I'm always impressed because I  
11       find myself agreeing with some of the things he  
12       says, even though he's representing what on paper  
13       would be the opposition to what I'm representing.

14              And one of the things I agree with is  
15       that you need to get this -- it would be helpful  
16       to get some consistency on whether or not you  
17       consider diesel displacement or an efficiency  
18       measure. And I think if we recall that the  
19       purpose of this report is to find ways to reduce  
20       petroleum, and we recall also that diesel is a  
21       petroleum product, it doesn't make any sense then  
22       to call it a displacement measure. It's  
23       definitely an efficiency measure and should be  
24       considered as such.

25              Taking that into consideration I think

1       it's also, as an efficiency measure, you have to  
2       consider some of the realities. And considering  
3       it, analyzing it as though it's a PZEV kind of  
4       stretches the imagination at this point, because  
5       there are no light duty diesel vehicles right now  
6       that will meet the 2007 standards, the LEVII  
7       standards.

8               And I have hope that the diesel  
9       manufacturers and the engine manufacturers and the  
10      automakers will find a way to meet that standard,  
11      if in fact they plan to bring light duty diesel to  
12      the market. And I'm certainly hoping they're not  
13      going to try and weaken the standard any.

14             But until they meet that standard I  
15      don't think it makes sense to consider them as  
16      being a significant part of the efficiency  
17      package.

18             And finally, I just again want to thank  
19      you for what you've done. I want to remind you  
20      that we're anxious to help see some of these  
21      recommendations implemented. And I think that in  
22      the long run you'll also find that some of our  
23      friends in the oil industry will see some benefit  
24      to expanding the vision for how transportation can  
25      be run in this country and in this state.

1                   And that in the long run this is going  
2                   to be a very valuable report to their industry, as  
3                   well. Thank you.

4                   MS. BROWN: Thank you very much,  
5                   Kathryn. Any comments or questions from the  
6                   panel. Okay, I see a number of other parties that  
7                   have not yet stepped forward. Can I see a show of  
8                   hands of those still wanting to speak? Yes, sir.  
9                   Do you want to come forward. And others, I'd like  
10                  to just see a show of hands. Wonderful, okay,  
11                  good, thanks.

12                 MR. LARSON: I'm Jim Larson with PG&E,  
13                 Clean Air Transportation Group. I just wanted to  
14                 build on the -- I'm sorry, my last name is spelled  
15                 L-a-r-s-o-n.

16                 The question brought up earlier by Mr.  
17                 Eaves regarding the table on page 14, I have  
18                 looked into some of the assumptions in task three  
19                 and see that the natural gas light duty vehicles  
20                 and the battery electric vehicles have included in  
21                 their overall costs an additional \$1000 for either  
22                 recharging of electric vehicle or a home fueling  
23                 unit, a Fuelmaker, as was mentioned earlier.

24                 My question with regards to the fuel  
25                 cell vehicles is I was surprised, as well, to see

1 the fuel cell vehicles scoring so much better, is  
2 in the hydrogen fueled fuel cell example, does  
3 that vehicle also have an additional home fueling  
4 infrastructure cost burdened in its overall  
5 economics? Obviously the gasoline and methanol  
6 wouldn't, but --

7 MR. BEMIS: Yeah. My recollection is  
8 that it does not.

9 MR. LARSON: Okay. Fuelmaker is, I  
10 think, targeting that product as a hydrogen  
11 fueling appliance, if you will, for future  
12 applications. I've heard them speak of that  
13 appliance as the existing natural gas home  
14 compressor as a bridge to ultimately a hydrogen  
15 unit. So I think that may be appropriate.

16 Now, how much difference that's going to  
17 make in the overall economics, and how those  
18 vehicles score, I wouldn't know. But I would like  
19 to see that number. I think that might be a fair  
20 analysis.

21 As a pipeline supplying natural gas  
22 transmission and distribution service to northern  
23 California, I'm curious about the assumptions that  
24 are made with regards to the well-to-tank I guess  
25 I'll call it, environmental impacts of that

1 pipeline system. Are those assumptions a national  
2 average? I think they're based out of the GREET  
3 model out of Argonne Labs.

4 And I've begun to do some research on  
5 our company's efforts, working with the EPA  
6 natural gas star program, to dramatically reduce  
7 our methane emissions, improve compressor  
8 efficiencies to reduce NOx emissions, improve  
9 valving and dry seals and so forth that are means  
10 of reducing our pipeline's overall impacts.

11 And I'm curious if there's an  
12 opportunity to distinguish the northern California  
13 pipeline, or maybe the California natural gas  
14 pipeline system as something cleaner than the  
15 assumptions made in the study. And, again, I  
16 don't know what the assumptions made in the study  
17 are, if it's a national average. Would it be a  
18 worthwhile effort for us to try to distinguish the  
19 California pipeline as one that is better than  
20 that national average.

21 MR. BEMIS: It's good to hear that  
22 you're making that progress. That's wonderful  
23 news. Personally, I don't know if Dan can recall,  
24 but since a contractor did that work for the Air  
25 Resources Board, I personally don't know what the

1 assumption was on the emission rate.

2 MS. TUTT: It's a marginal analysis, so  
3 most of it is natural gas and TIAX, you're here,  
4 right? It's a natural gas. It's clean, it is not  
5 the national average. It's a California --

6 MR. BEMIS: But his question was for a  
7 pipeline, I think it was for a pipeline,  
8 specifically for natural gas pipelines.

9 MS. TUTT: Okay. So is it like are you  
10 saying remote --

11 MR. BEMIS: Natural gas pipelines that  
12 are used to transport gas. And inside the state  
13 he's saying they've got some remedial efforts,  
14 whatever, research that could lead to reducing  
15 emissions from having more efficient compressors  
16 or cleaner compressors or whatever --

17 UNIDENTIFIED SPEAKER: California  
18 pipelines use electric compressors --

19 MS. BROWN: Yeah, we need you to come to  
20 the mike here. Ms. Pont, do you know what was  
21 assumed?

22 MS. TUTT: Yes.

23 MS. PONT: (inaudible) --

24 MS. BROWN: You have to come to the  
25 mike, though, to respond.

1 MS. PONT: I'm Jennifer Pont with TIAX.  
2 P-o-n-t. And I can't speak to this specific  
3 analysis, but I know that a model similar to the  
4 GREET model was used for the well-to-tank  
5 emissions. And I don't know if we want to try and  
6 get some comments or some information from you.  
7 Maybe we can refine the analysis.

8 MS. BROWN: I think that's probably a  
9 good way to handle this, if you could pose your --  
10 you know, we have your question --

11 MR. LARSON: I'll work on it between now  
12 and the 6th, then.

13 MS. BROWN: Well, we won't be doing any  
14 new analysis, but we can certainly find out what  
15 was used and clarify that for you. We'll commit  
16 to do that.

17 MR. LARSON: Okay, thank you.

18 MS. BROWN: Thank you. Next, I saw a  
19 hand in the back. Sir, would you like to come  
20 forward.

21 MR. MOSCOE: Good morning, Gregg Moscoe  
22 from CalStart. And I have basically just two  
23 questions that I'd like to, you know, get some  
24 feedback on.

25 Given the current trends and, you know,



1 markets and politics and everything, do you think  
2 that your assumptions, in terms of the miles per  
3 gallon and the fuel costs, are realistic and  
4 really serve what you're trying to eventually  
5 achieve?

6 Because I mean the gas per gallon costs  
7 are about what we're paying now. And the miles  
8 per gallon that you're estimating, I mean my car  
9 gets about 23 miles per gallon, so --

10 MR. BEMIS: Yeah, do you want an answer?

11 MR. MOSCOE: Yeah.

12 MR. BEMIS: The answer is yes, we do  
13 believe they're realistic. And the reason for  
14 that is because --

15 MR. MOSCOE: Why?

16 MR. BEMIS: Okay, I was going to  
17 explain. And the reason for that is because we  
18 use an analysis tool called CALSTART (sic), which  
19 is a simulation model to simulate and to forecast  
20 gasoline consumption based upon 13 vehicle  
21 classes, and based upon typical buying patterns of  
22 how much of each of these class is bought. And  
23 typical operating rates in terms of miles per year  
24 for a new car versus one that's a year old, versus  
25 two years old, et cetera, et cetera, until it goes

1 down to the end of its useful life.

2 And all those data get crunched into  
3 this computer model that spits out the results.  
4 And the weighted average result for fuel economy  
5 was on the order of 21, 21.2 miles per gallon.  
6 And that's what we used for our forecast, --

7 MR. MOSCOE: Right.

8 MR. BEMIS: -- and that's what we used  
9 for our analysis of alternatives to the forecast.

10 MR. MOSCOE: Okay. Where did the 40  
11 miles per gallon come in?

12 MR. BEMIS: We ran a separate  
13 spreadsheet where we evaluated what the fuel  
14 consumption would be if we had a different mix of  
15 vehicles on the road, --

16 MR. MOSCOE: Right.

17 MR. BEMIS: -- and they had different  
18 attributes like they were more fuel efficient.  
19 And we basically seeded this model with output  
20 from this CALSTART model --

21 MR. MOSCOE: Right.

22 MR. BEMIS: -- in terms of vehicle  
23 percentages and things like that. And then we  
24 rolled in the new technology starting with 2008 to  
25 2014 linearly over a seven-year period, assuming

1 one-seventh per year would penetrate each one of  
2 those vehicle classes, to get an idea of what the  
3 petroleum reduction would be.

4 MR. MOSCOE: Right. Do you think we're  
5 within realistic grasp of that?

6 MR. BEMIS: Well, whether or not it was  
7 appropriate or makes sense for manufacturers to do  
8 the same level of fuel economy for each of the 13  
9 classes of vehicles, is probably a level of detail  
10 beyond which we were able to do right now. But  
11 our assumption would be that that's an average.  
12 And that if the manufacturers, or if the buying  
13 public wasn't interested in buying vehicles, this  
14 is characteristic it would, on average, be this  
15 way.

16 MR. MOSCOE: Okay.

17 MR. BEMIS: So it's not really a  
18 forecast; it's an evaluation.

19 MR. MOSCOE: Right. The other thing  
20 that I wanted to ask about, and it's probably  
21 beyond the scope of what you're trying to do, but  
22 maybe in the future you're looking at, in terms of  
23 the alternatives, the alternative fuels that might  
24 be evaluated, which of those technologies or  
25 choices might be the most effective in terms of

1 moving consumers away from a mono-fuel model of  
2 gasoline. And trying to figure out some way of  
3 factoring that into the equation.

4 MR. BEMIS: I'm sorry, I didn't hear  
5 your question because I was just being cautioned  
6 that I was using the wrong term. You're from  
7 CalStart --

8 MR. MOSCOE: Yes.

9 MR. BEMIS: And I was calling the model  
10 CALSTART.

11 MR. MOSCOE: Well, I was going to take  
12 credit for that.

13 (Laughter.)

14 MR. BEMIS: Okay. It's CALCARS --

15 MS. BROWN: You mean CALCARS.

16 MR. BEMIS: -- is the model. Excuse me,  
17 I apologize. Now, if you'd repeat the question,  
18 now that I've clarified that.

19 MR. MOSCOE: No, I was just saying that  
20 it probably goes beyond what you're trying to do  
21 here, but maybe for the future you could look at  
22 which of the technologies, the options might have  
23 the greatest benefit in terms of moving people  
24 away from, or weaning them off gasoline towards  
25 another type of fuel delivery.

1                   And since we're looking at, you know,  
2                   moving towards hydrogen, you know, what's the best  
3                   way to approach it to get people away from the  
4                   ARCO and moving over to the GASCO or whatever.

5                   MR. BEMIS: Well, let's get ARCO to do  
6                   hydrogen.

7                   MR. MOSCOE: Great. All right, thanks.

8                   MS. BROWN: Thank you, Gregg. Other  
9                   presenters or commenters? Or do I start to name  
10                  names at this point? Thank you, sir, please come  
11                  forward.

12                  MR. FINNEY: Kevin Finney; I'm the  
13                  California Outreach Coordinator for the Clean  
14                  Vehicles Program at the Union of Concerned  
15                  Scientists. We'll be submitting some written  
16                  comments that will be somewhat more technical. I  
17                  want to give a general perspective on the work  
18                  that you've done so far today.

19                  I want to say that just in way of  
20                  opening that we at UCS certainly see the  
21                  opportunity to outline a petroleum reduction  
22                  strategy as an opportunity to simultaneously  
23                  protect California consumers and the economy as a  
24                  whole against future price shocks and instability  
25                  shortages.

1           And from the environmental point of  
2   view, an opportunity to improve public health; an  
3   opportunity to reduce greenhouse gas emissions;  
4   and to reduce the other various harms that  
5   petroleum does to the environment in terms of  
6   damage to the soil and water and so forth that we  
7   depend on in this state in many ways.

8           So it's our perspective that none of  
9   those goals have to be sacrificed in order to move  
10  forward in terms of petroleum reduction. And I  
11  think on the whole, your report has done a pretty  
12  good job of taking that into account.

13           Let me start just with a brief comment  
14  on the goals that you've established. I think  
15  you've done a good job of establishing goals that  
16  are achievable and yet significant. Our own  
17  perspective would be that they should be somewhat  
18  more ambitious, especially over the long term. We  
19  really need to achieve more significant reductions  
20  in petroleum use in order to adequately protect  
21  our environment and guard against global warming.

22           But I think the goals, on the whole, a  
23  good start. You've met your goal of having a  
24  significant first step that is achievable, and yet  
25  ambitious.

1           I think where the report, from our  
2       perspective, falls a little short is in the  
3       recommendations that it puts in place to achieve  
4       those goals. And here it's not that we strongly  
5       disagree with any of the particular  
6       recommendations, but I, in particular, and the  
7       organization, as a whole, is just a little  
8       suspicious of reports that recommend achieving a  
9       goal by calling on another branch of government to  
10      accomplish something.

11           And as much as I agree with the call on  
12      the federal government to improve fuel efficiency  
13      standards and no organization works any harder on  
14      this than ours does, we think you haven't been  
15      ambitious enough in looking at the options that  
16      the state can take. And really recommending that  
17      the state enact a series of policies to improve  
18      the fuel efficiency of California's fleet of  
19      vehicles, not just the state fleet, but the fleet  
20      that consumers use throughout the state.

21           And really, you know, I think there  
22      needs to be a specific recommendation outlined  
23      that a series of policies be adopted to move the  
24      state forward on that goal. We need to look at  
25      some of the things that you've examined in your

1 pricing section, pay-at-the-pump, feebates, tax  
2 credits to encourage the use of hybrid vehicles.  
3 There's a number of things here that we could do  
4 that really need to be articulated a little more  
5 strongly, I think, in the overall findings.

6 We do have reservations, as some of the  
7 others have expressed, about the recommendation  
8 for increased use of Fischer Tropsch fuels. That  
9 that perhaps does result in increased greenhouse  
10 gas emissions. Again, you know, we see no reason  
11 that a strategy to reduce petroleum dependence  
12 should include elements that increase  
13 environmental harm in one way or another, or  
14 endanger the public health. And that's why we're  
15 glad to see that the overall recommendations don't  
16 seem to include a push for increased use of light  
17 duty diesel vehicles with the toxic health impacts  
18 of diesel fuels.

19 So I think that it's a good start. We  
20 can improve it with a greater emphasis on what  
21 California can do on the policy level to improve  
22 fuel economy.

23 And if we end up getting the ideal  
24 situation where both the federal government acts  
25 to improve fuel economy and California enacts a



1       number of steps to improve fuel economy then we'll  
2       be that much further along in achieving the more  
3       ambitious petroleum reduction goals that we really  
4       need to down the line.

5               So those are our thoughts today.

6               MS. BROWN: Thank you, Mr. Finney. We  
7       will, of course, welcome any specific policy  
8       action steps that your organization would like to  
9       recommend --

10              MR. FINNEY: We'll be putting those in  
11      in writing.

12              MS. BROWN: -- for the final report.  
13      Great, thank you very much. Other comments? Ms.  
14      Knudsen.

15              MS. KNUDSEN: Hi, I'm Gretchen Knudsen  
16      with International Truck and Engine Corporation.  
17      I just want to echo Kathryn Phillips' comments as  
18      far as the open process and the willingness of  
19      staff to sit down and go through the technical  
20      methodologies and the facts, and their willingness  
21      to really examine the issues. We certainly  
22      appreciated the opportunity in meetings.

23              I think in general we're quite  
24      supportive of the report. I think that it's very  
25      reflective of staff's commitment and their word in

1 the last two years.

2 We just have a few comments. The first,  
3 I would just like to also address our concern, at  
4 least the way we read it, on the task three. That  
5 the task three petroleum displacement figures  
6 don't seem to be carried forward into task four or  
7 task one.

8 And so if there is an opportunity to sit  
9 down with staff to understand that better, we  
10 would appreciate that. It appears to us that  
11 perhaps the gasoline gallon equivalency was  
12 applied twice to the same figure, and that may be  
13 where some of the discrepancy comes from.

14 I'd also like to point out in the  
15 executive summary report on page 6, figure 3. The  
16 10 percent market penetration for light duty  
17 diesel, it's a little confusing to the reader if  
18 somebody's just flipping through the report and  
19 only looking at the graphs, what that 10 percent  
20 means. And if it would be possible for staff to  
21 spell that out a little bit more within the graph,  
22 it would be helpful.

23 I don't think that the reader, just  
24 looking at the graph, immediately understands that  
25 the other options are 100 percent, and that that

1       one's 10 percent.

2               As far as the biodiesel and the Fischer  
3       Tropsch recommendations, we do appreciate staff's  
4       willingness to take a look at those options and  
5       assess them so that we, as an engine manufacturer,  
6       too can understand what types of impacts those  
7       fuels would have.

8               And also, if it would be possible in the  
9       executive summary report to -- I know that you  
10      mentioned near term and maybe long term, but  
11      they're not really clearly spelled out as far as  
12      what those timeframes imply. One says a few  
13      years, and the other - it's a little bit  
14      ambiguous. If it was possible to spell those out  
15      a bit more, I think that that would be useful to  
16      policymakers.

17              And then just the last question is a  
18      process question. The task three report indicates  
19      on the front page that it is final. And so I just  
20      wanted to clarify, is staff accepting comments on  
21      that task three report, or is that considered  
22      final and comments are only being accepted on the  
23      executive summary report?

24              MS. BROWN: Well, as I said before,  
25      we're attempting to encourage the parties to focus

1 on the main report, the summary report, because  
2 that is probably what the legislature and the  
3 governor will read. And only take issue where you  
4 see, you know, egregious technical inconsistencies  
5 or, you know, order of magnitude issues.

6 And the question you have to ask  
7 yourself is if any technical inconsistencies would  
8 really change the final ranking or final  
9 recommendations or goals.

10 So, at this point, after two years and  
11 many of you have been with us through the six or  
12 seven workshops that we've held, and then the  
13 several meetings that you've cited that, you know,  
14 we prefer to move forward from here.

15 So, again, to the extent that you can  
16 focus on the recommendations on the goals we would  
17 appreciate that level of input.

18 MS. KNUDSEN: Great.

19 MS. BROWN: And we do stand ready to  
20 meet with the parties offline, if necessary, even  
21 this afternoon, if necessary, to you know, pursue  
22 some of these more detailed technical questions  
23 along the lines Mr. McCann raised, and others may  
24 want to raise.

25 MS. KNUDSEN: Great. Just one last

1 comment then. As far as the PZEV designation to  
2 light duty, International stands behind the belief  
3 that we will achieve those PZEV standards, that  
4 we'll meet the LEVII standards, and would never  
5 call for relaxation in those standards in  
6 consideration of this report. Just wanted to  
7 clarify that.

8 And to thank ARB and CEC for the  
9 willingness to recognize that commitment. Thank  
10 you.

11 MS. BROWN: Thank you very much. Mr.  
12 Koehler.

13 MR. KOEHLER: Thank you. Tom Koehler,  
14 Kinergy Resources. I have just a couple  
15 questions. One is, Dan, in your presentation you  
16 talked about the need for more study on ethanol.  
17 What about this current report that led you to  
18 that conclusion?

19 MR. FONG: I'm sorry, can you be --

20 MR. KOEHLER: What is -- why did you  
21 make that recommendation? Is there something in  
22 particular in this current report that led you to  
23 the conclusion that ethanol scenarios needed more  
24 study? I'm just trying to garner a little more  
25 specificity from you.

1           MR. FONG: Yes, again, as Gerry Bemis  
2 earlier remarked, we were not using any supply  
3 side considerations when we developed some  
4 estimates for the fuel or retail fuel prices of  
5 these various fuel substitution options.

6           We feel that in the case of the ethanol  
7 blending or increased ethanol blending there might  
8 be some supply side economic advantages that we're  
9 not able to capture in our current analysis. And  
10 if those economic advantages were included it  
11 might result in a lower retail price for the  
12 various ethanol blended, or ethanol cases that we  
13 evaluated.

14           And because that fuel price is an  
15 important input to our overall cost/benefit  
16 analysis, we believe that future work in that area  
17 has merit, and might reveal lower retail fuel  
18 prices that we can then use in our cost/benefit  
19 comparison.

20           MR. KOEHLER: Okay. Were there other  
21 items? Or is that the main one, the main driver?

22           MR. FONG: That's the primary item.

23           MR. KOEHLER: So specifically, the price  
24 of ethanol per gallon that you used?

25           MR. FONG: Yeah, and there are also some

1 sort of emission characteristics at the sort of  
2 higher alcohol blends that I think we need to  
3 explore. I mean there's a lot of potential  
4 disagreement on the emission impact of these  
5 higher ethanol blended products. And we'd like to  
6 make sure that everybody's on the same page when  
7 evaluating those kinds of impacts.

8 And that if emissions are impacted in a  
9 negative way, that we account for potential  
10 technological additions to the vehicle to then  
11 eliminate those kinds of emission outcomes. And  
12 because of that we can then reflect that in the  
13 incremental vehicle cost.

14 MR. KOEHLER: Okay. And then this is a  
15 more specific question, and if nobody has the  
16 answer right now then I can do it offline, as  
17 well.

18 But there was a 50 mile transportation  
19 charge, if you will, on emissions from the, I  
20 believe, terminal to the stations that --

21 MS. BROWN: In appendix A?

22 MR. KOEHLER: Yeah, in appendix A. And  
23 for, for instance, E10. And I was curious to know  
24 what that is about, and if it's relative to the  
25 current baseline, how does it differ?

1 MS. BROWN: Ms. Tutt or Ms. Pont?

2 Either of you have an answer?

3 MS. TUTT: I don't know. We can get  
4 back to you.

5 MS. BROWN: -- maybe talk, get back to  
6 you on that one.

7 MR. KOEHLER: Okay.

8 MS. BROWN: -- very specific question.

9 MR. KOEHLER: Let me ask, this will be a  
10 more specific question. Who should I chat with  
11 about the emission? Who? You?

12 MS. TUTT: That would be Stephan --  
13 well, I can -- I'll ask Stephan Unnasch, who was  
14 our contractor did that.

15 MR. KOEHLER: Okay.

16 MS. TUTT: He's not here today, but --

17 MR. KOEHLER: Okay, great, that's  
18 perfect.

19 MS. BROWN: Is that okay?

20 MR. KOEHLER: Yeah. Okay, my final  
21 comment, I guess, would be in regards to the  
22 recommendations. I believe that the use of  
23 renewable fuels needs to be specifically  
24 mentioned.

25 We have, by definition, as we move away



1 from petroleum and fossil fuels, renewable fuels  
2 are the only sustainable, long-term fuel. And not  
3 mentioning a specific target for renewable fuels,  
4 whether that be hydrogen made from renewable, or  
5 other biofuels, is an oversight which must be  
6 corrected.

7 As a state we've done a good job in  
8 identifying and point out renewables for the  
9 electron. And now -- for electricity.

10 And we should do the same thing with  
11 transportation. So, that's my only specific  
12 recommendation on your recommendations for the 10  
13 percent.

14 Other than I do think we could be more  
15 aggressive, as well, as far as looking at  
16 alternative and renewable fuels.

17 Thank you.

18 MS. BROWN: Thank you for your input. I  
19 think we'd have to take that one under advisement,  
20 that last recommendation. We will do that. Thank  
21 you.

22 MR. KOEHLER: Okay.

23 MS. BROWN: Other presenters or  
24 commenters?

25 I feel this workshop will not be

1 complete without hearing from Ms. Grey and Mr.  
2 Douglas, since I know you're here present. Would  
3 you like to make a comment or statement before we  
4 end today?

5 MR. DOUGLAS: No. We've submitted a  
6 letter.

7 MS. BROWN: Okay. And for the record,  
8 the Automobile Association, the American  
9 Automobile Manufacturers Association, has  
10 requested a delay in this proceeding till August,  
11 which we've referred to our Commissioners for  
12 consideration.

13 Ms. Grey, do you wish to make a  
14 statement before we --

15 MS. GREY: No, thank you.

16 MS. BROWN: Okay. Are there others in  
17 the audience that would want to come forward at  
18 this point? I can hear those stomachs growling.

19 (Laughter.)

20 MS. BROWN: Questions, comments from the  
21 panel, any other statements from the panel?

22 MR. FONG: Yeah, I'd like to reemphasize  
23 again that the illustrative example that we  
24 portray in this presentation, as well as in our  
25 summary document, regarding mechanisms that might

1 be employed to reach the recommended goal really  
2 is only an illustrative example.

3 Several speakers have mentioned various  
4 other recommendations that we have made. There  
5 really are three recommendations that are in the  
6 document.

7 Specific fuels that sound like we've  
8 given some kind of endorsement, that is not  
9 correct. We used those fuels as examples of how  
10 they can be combined in an overall strategy to  
11 reach the goal that we are recommending.

12 We are not necessarily recommending, for  
13 example, that Fischer Tropsch diesel be the one  
14 and only option for substitution in heavy duty  
15 vehicles. We're only illustrating how Fischer  
16 Tropsch diesel can be combined with a variety of  
17 other reduction options that allows us to  
18 reasonably reach the goal that we propose.

19 So I need to make that clear and make  
20 sure that the record reflects that we are making  
21 only three recommendations. They involve an  
22 overall reduction in petroleum fuel demand. They  
23 involve the recommendation of doubling new vehicle  
24 fuel economy. And they involve a 10 percent  
25 alternative fuel usage level by the year 2020.

1 MS. BROWN: Thank you, Dan. And one  
2 last word. I am again stressing the invitation to  
3 have parties submit written comments to the  
4 docket. And that's docket number 1-SRPD-01 by  
5 June the 6th.

6 And we will be holding the hearing at  
7 9:30 in the Sierra Hearing Room at CalEPA  
8 involving Commissioners Boyd, Geesman and ARB  
9 Chairman Lloyd on Friday, June 6th, which is three  
10 weeks from tomorrow; and should give parties the  
11 full 30 days to comment on the summary report.

12 And to the extent that you want to make  
13 comments on the technical appendices where you  
14 feel there are major egregious inconsistencies, we  
15 would also take into account those kinds of  
16 comments.

17 So I'd like to invite both written  
18 comments and oral testimony at the June 6th  
19 hearing.

20 Mr. Eaves?

21 MR. EAVES: Could you give that docket  
22 number again?

23 MS. BROWN: Yes, let me repeat that,  
24 it's 1-SRPD, Strategy for Reducing Petroleum  
25 Dependence - dash - 01.

1           And I want to thank everyone for coming  
2       today and for I think what's been a very  
3       productive interchange between us and you.

4           Thank you very much.

5           (Whereupon, at 12:34 p.m., the workshop  
6       was adjourned.)

7                       --o0o--

## CERTIFICATE OF REPORTER

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